THE SOVIET-AMERICAN STRATEGIC COMPETITION :

THE ACTION-REACTION PROCESS RECONSIDERED

RICHARD E. SARGENT

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Affirmation of Authorship

University Regulation 2.4.15

I declare that this Thesis has been composed by myself, that the work is my own and that any errors of omission or commission are entirely my own.

CONTENTS

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SUMMARY

This study presents a detailed examination of the postwar strategic competition between the United States and the Soviet Union in an attempt to determine the degree to which the competitive process can be described as an 'arms race' fuelled by the so-called 'action-reaction' process. The role of 'action-reaction' is assessed through an investigation into the factors responsible for the initiation and development of each of the major advances in the evolution of Soviet and American strategic doctrines and weapons deployments.

This inquiry concludes that a consideration of those factors which have obstructed the effective exercise of 'action-reaction', the numerous internal or otherwise non-responsive influences and constraints which have affected the formation of defence policy and the various processes through which strategic doctrines and weapons programmes have been developed, clearly establishes that any analysis which depicts the arms competition as a two-party 'race' powered by 'action-reaction', grossly over-simplifies the nature of the contest.

It is proposed that the origins and development of the Soviet-American strategic relationship are more accurately characterised as the product of a highly complex 'chemical process' which had as its catalyst the early postwar perceptions of each competitor as an adversary by the other. Since the late 1940s, this catalyst of competition has stimulated the development of strategic doctrines and force structure in two

very dissimilar domestic environments, yielding two distinctly different strategic compounds, which have consistently retained their respective elements and properties while continuing some degree of interaction. The significance of certain of these intrinsic elements for arms limitation is considered in a final shapter dealing with the agreements reached at the Strategic Arms Limitation Talks in 1972 (SALT I).

These conclusions rest upon source materials which include official documents, the public statements and writings of political leaders and military commanders, periodical literature and an extensive bibliography covering the history and theory of 'arms race' development and the strategic doctrines, foreign and defence policies of the United States and the Soviet Union.

INTRODUCTION

THE CHEMISTRY of COMPETITION

STRATEGIC COMPETITION:

THE REAL, THE PUBLIC AND THE PRETENDED

The United States and the Soviet Union are currently struggling to define the terms of a treaty intended to limit the overall level of their nuclear forces, to establish the character of their deployments and generally to bring some measure of order to their strategic relationship. Already under critical fire even before a final draft is agreed, the present round of Strategic Arms Limitation Talks follows an earlier series of discussions which have been forcefully attacked for their failure to restrain the 'arms race' or to establish an equitable nuclear balance.

While the momentum of technology alone might be expected to frustrate the construction of an effective arms control system, the problems of American and Soviet negotiators and strategic planners are made immeasurably more difficult by a persistent failure to develop a wholly pertinent conception of the process of arms competition beyond a collection of worn and excessively simplistic models.

Modellers of the past have described the competitive process in terms of the relentless pressure of technology, an analysis in which strategic doctrine and defence policy are the helpless captives of weapons designers, while others have cast self-seeking cabals of bureaucrats, board chairmen and 'old soldiers' as the driving force of the postwar strategic contest.

A third conception, perhaps the most widespread metaphor of competition, describes a sparingly uncomplicated Soviet-American 'race' powered by a sharply sensitive process of 'action and reaction'. This frenzied dash to stay even or pull ahead is thought to produce an intricately harmonised performance of strategic counterpoint in which doctrine and deployment are matched by counter-doctrine and counter-deployment.

Unfortunately for those committed to arms control through a 'freeze' on all but benign technology, or by constraints upon a number of corporate and uniformed conspirators, or by an interruption in the performance of 'action-reaction' which slows the tempo, none of these misshapen models adequately explains Soviet-American strategic development. Indeed, the authority assigned to each of these analyses as the key to understanding the 'arms race' process may have retarded the progress of arms control in the past and is symptomatic of the bemused state in which policy-making has been conducted throughout the postwar period.

If many political leaders and private analysts are to be believed, the Soviet Union and the United States have been matched for more than a generation in an 'arms race' fuelled by 'action-reaction'. The development of both weapons systems and strategic doctrine is accordingly seen as the product of a

contest in which the speed and course of each competitor are fixed by the pace and direction of the other. However, even the most cursory review of postwar history and the lengthy catalogue of influence, pressures and constraints affecting Soviet and American policies, reveals that the 'arms race' is, in fact, run by each contestant along a course predominantly of his own design and at a rate significantly determined by each competitor for himself.

In circumstances of such complexity, the impress of the blunt instrument of 'action-reaction' crudely brutalises reality, sheering off great slices of postwar history and contemporary experience. While conceding that models of any kind must by their very nature simplify and, to some degree, distort, the burden of the argument here is to propose that the Soviet-American strategic competition is more revealingly characterised as a highly complex 'chemical process' in which the early postwar 'reaction' of each side to the other as an adversary acted as the catalyst of competition. Thereafter, the policy-making process has operated in two very dissimilar environments, yielding two distinctly different and somewhat unstable strategic compounds which, while retaining their individual elements and properties, continue some degree of interaction.

THE CHEMISTRY OF COMPETITION: TOWARDS A TYPOLOGY

The complex process of strategic competition is perhaps best defined by an analogy with chemistry. From the end of the Second World War what might be termed the 'chemistry of competition' has yielded a number of phases in the development of the competitive process which form a rough typology of the Soviet-American strategic relationship. As this typology describes the range, character and sequence of the developments marking the course of the 'arms race', it may be useful to present the historical record in typological form before proceeding to a detailed analysis.(1)

* 1945-1953: THE EMERGENCE OF DETERRENCE:

The First Asymmetry

The Truman presidency witnessed a very extensive postwar demobilisation, the American perception of the USSR as a dangerous adversary requiring 'containment' and a gradual increase in the importance of air-nuclear power in the 'containing' role. The early adversary perception and the growing significance of nuclear weapons eventually led to the first suggestion of 'nuclear deterrence' as the most effective and economical means of restraining the Soviet Union.

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(1) For one attempt at representing the evolution of the Soviet-American strategic relationship, see Roman Kolkowicz, 'Strategic Parity and Beyond', World Politics, April 1971, pp.429-451.

* This is not intended to simulate the format of direct quotation, which it is demonstrably not, but the argument does require some concise presentation of themes in relation to chronology.

The same period in the USSR covered the final years of Stalin's leadership. In the Russian case the discovery of a major new adversary was accompanied by the beginning of a lengthy programme of Army re-organisation and modernisation, an intensive and highly successful effort to develop the full ranges of modern weapons, and a 'freeze' on military doctrine which cast Soviet strategy solidly in its wartime form. This doctrinal 'freeze' resulted in a virtual ban on any consideration of the significance of atomic weapons for modern warfare, the absence of any hint or suggestion of the 'deterrence' concept and the emergence of a measurable 'lag' or 'gap' between Soviet and American strategic doctrines over the 'deterrence' issue. This 'lag' introduced the first major asymmetry into the Soviet-American relationship. Finally, the growing nuclear emphasis in US strategy during this period contrasted with Russian reliance upon large ground forces and a 'hostage Europe' strategy as the bulwark of Soviet security.

BUDGETARY STABILITY vis-a-vis STRATEGIC SUPERIORITY:

i 1953-1955: Re-examination and Reform

The years 1953 to 1960 are perhaps best divided into two periods during each of which both Soviet and American policies experienced roughly aligned phases in their development. The first of President Eisenhower's terms of office traced the continuing expansion of the role of nuclear weapons in American strategy and the acceptance of the principle of nuclear deterrence. Persuaded that the United States required greater military strength for both deterrence and defence but firmly committed to balanced federal budgets, the Administration adopted the 'New Look'

policy and a strategy of 'massive retaliation' as a relatively thrifty alternative to a costly increase in America's overall military capability.

As the United States was taking its 'New Look', the death of Stalin was followed by a 'thaw' in the postwar 'freeze' on military doctrine and a gradual Soviet adjustment to the strategic implications of nuclear power. The re-examination of doctrine and the post-Stalin leadership crisis which accompanied it, produced a very substantial improvement in the declaratory status of nuclear weapons and the first Soviet discussion of 'nuclear deterrence' (ultimately the equivalent of 'minimum deterrence') in the pronouncements of Premier Malenkov.

The first half of the 1950s also witnessed the apparent rejection of 'minimum deterrence' with Malenkov's dismissal, a continuation of Stalin's intensive programme of strategic weapons development, further modernisation of the ground forces and the maintenance of an operational doctrine which largely entrusted Soviet security to ground armies gathered along the frontiers of western Europe.

ii <u>1956-1960: Nuclear Solutions</u>

During the second Eisenhower term the development of Soviet strategic nuclear capabilities, tied to the USSR's long established conventional strength, prompted a 'New New Look' in which the United States formally abandoned the long-term maintenance of strategic superiority, declared 'sufficiency' to be the objective of American strategic planning, discounted the significance

of the 'missile gap' and enlarged the responsibilities of tactical nuclear weapons as an economical means of eliminating the acknowledged inflexibility of the earliest version of 'massive retaliation'.

The period from 1956 to 1960 in the USSR witnessed Khrushchev's assumption of full political leadership, a growing emphasis on missile-nuclear power during the 1950s, the establishment of the ICBM as the decisive weapon of modern warfare in 1960, and the modification of Khrushchev's strongly negative views on 'deterrence'. This reversal led, in the broadest terms, to a closing of the conceptual 'lag' between the United States and the USSR over the 'deterrence' principle. There was also public expression of Khrushchev's desire to reduce defence spending, as well as to increase investment in the light industrial sector of the national economy. Declaratory doctrine in this period attempted to exploit the Soviet advantage in missile technology, first through assertions of strategic 'parity' with the United States and then through claims of 'superiority' and a 'war-waging', even a 'war-winning' capability.

This declaratory position differed dramatically from the operational picture, with its very low level of ICBM deployments and the apparent acceptance of Malenkov's discredited concept of 'minimum deterrence'. Soviet policy failed to conform to American expectations by abstaining from a massive ICBM deployment and producing only a small force of long-range bombers, while accumulating a large arsenal of MRBM/IRBMs.* Soviet ground forces, suffering from a decline in doctrinal status as well as in manpower, nevertheless continued to account for a major part of the USSR's effective capacity to wage war.

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* Medium Range Ballistic Missile/Intermediate Range Ballistic Missile.

THE STRATEGIC 'CROSS-OVER': 'WAR-WAGING or 'WAR AVOIDANCE'?

1 1961-1963/64: 'Usable' Military Power v 'Minimum Deterrence'

The Soviet-American strategic relationship during the 1960s also divides into two periods. The Kennedy years brought an American commitment to credible deterrence and effective defence through 'usable' fully flexible, military power. The United States was to stand ready to 'wage war' on any level of conflict, meeting any Soviet challenge with the appropriate 'controlled' or 'flexible response'. There was also an effort to prepare for the breakdown of deterrence through a proposal for Soviet-American acceptance of limitations on the scope of a future conflict, restricting nuclear strikes to military targets. All of these policy objectives inspired a massive nuclear and conventional build-up which brought the United States to at least the approaches of a first-strike capability.

In the early 1960s the Soviet Union remained attached to a strategy of 'minimum deterrence' or 'war-avoidance'. Khrushchev apparently accepted a position of strategic inferiority for the foreseeable future, despite the still bold assertions of the USSR's declaratory doctrine, the Cuban missile initiative of 1962, and the beginning of the USSR's first major ICBM deployment in the same year. The first half of the 1960s also brought a firm Soviet rejection of American 'rules' on the limitation of nuclear warfare and a pledge that any attack upon the USSR would trigger a full scale response. The Russians thereby derived maximum deterrent effect from still 'minimal' nuclear deployments. Soviet ground forces, now openly protesting against the decline in their resources and doctrinal status, were maintained in strength in the European theatre.

ii 1963/64-1967/68: 'Stable deterrence' v 'War-Waging'

After several years in which the United States had amassed nuclear forces without any useful measurement of its strategic requirements, in the early and mid-1960s American doctrine turned to 'assured destruction', along with 'damage limitation', as the solution to the problem, 'How much is enough?' After the succession of Lyndon Johnson to the Presidency, the 'assured destruction' mission loomed ever larger at the expense of 'damage limitation'. In the second half of the 1960s, the United States gradually 'crossed over' from the 'war-waging' posture of the early Kennedy years to a doctrine of 'war-avoidance' based upon the mutual vulnerability of Soviet and American urban areas to nuclear attack ('Mutual Assured Destruction' - MAD). MAD, originally stemming from the need for some measurement of strategic requirements, eventually became a fundamental precept of American doctrine. Its acceptance obliged both the United States and the Soviet Union to abandon any pretentions to strategic superiority, renounce the development of a first-strike capability and abstain from the deployment of ballistic missile defences. 'Stable deterrence' was henceforth to rest upon 'parity' in offensive systems and a countercity emphasis in targeting doctrine. However, 'stable deterrence' was not apparently seen to require an end to the development of multiple warheads, a project intensively underway during this period.

As the United States under President Johnson was proceeding to a position not unlike that of the USSR under Khrushchev in its all but exclusive emphasis on deterrence or 'war-avoidance', the USSR gradually 'crossed over' to a position resembling that of the USA

in the early 1960s. 'Credible deterrence' and effective defence were sought through something like 'usable force' and a genuine 'war-waging' capability. In contrast with America's emerging concept of 'Mutual Assured Destruction', Soviet doctrine in the late 1960s apparently required a major expansion of nuclear forces leading to the achievement of some variety of strategic advantage, a significant counterforce element in targeting and an effective system of ballistic missile defence. Once again the Soviet Union refused to order its strategic relationship with the United States on the basis of American 'rules'.

1967/68 - May 1972: COMPETITION AND ACCOMMODATION

In 1967 President Johnson approved a significant revision in American policy with the announcement that the United States was to deploy the Sentinel ABM* system as a shield against a Chinese nuclear attack on US cities. In 1969 the Nixon Administration replaced plans for Sentinel with a proposal for Safeguard, a system designed to defend the US Minuteman deterrent against a Soviet first-strike. This sudden reversal of US ABM policy was encouraged by Soviet violation of American 'rules' on strategic 'parity' and missile defence. The first term of the Nixon presidency also brought the adoption of 'sufficiency' as the standard of America's offensive force levels. However, the acceptance of 'sufficiency' did not imply the cancellation of deployment plans for multiple independently targeted warheads.

Towards the close of the 1960s and in the early 1970s, the USSR remained attached to the strategy under

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* Anti-Ballistic Missile

development since the retirement of Khrushchev. The policy of the 'collective leadership' in this period achieved Soviet superiority in ICBMs, the continuing expansion of a force of missile launching submarines equal in quality to that of the United States and the improvement of Soviet ballistic missile defences.

By the late 1960s and early 1970s both the United States and the Soviet Union had, in large part, fulfilled their respective definitions of strategic effectiveness or 'sufficiency'. However, each had also initiated new deployments which threatened to compromise the position of the other. Facing the prospect of a hazardous and vastly expensive escalation of the competitive process, they were persuaded to attempt the achievement of some degree of control over their relationship through the Strategic Arms Limitation talks (SALT I). In 1972 these negotiations resulted in the treaty on the limitation of anti-ballistic missiles, an interim agreement affecting offensive systems and a commitment to continue discussions aimed at reaching a long-term accommodation.

Strategic Competition: Re-considered

The 'Action-Reaction' Thesis

After four years of war in the Pacific the United States delivered its final blow against Japan with only two aircraft, each carrying a single bomb. The assertion that the Hiroshima and Nagasaki attacks in fact ended the war is open to question; but it is surely true that the explosion of these rudimentary bombs revealed a dramatic new development in weapons technology, which would eventually transform the nature of modern strategic thought. The Soviet Union ensured that this transformation was not to be an exclusively American accomplishment when she detonated an atomic device in 1949, entering into what was to become an intensive arms competition with the United States.

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Since the end of the Second World War both the United States and the Soviet Union have rapidly moved beyond the crude beginnings of the 1940s, greatly increasing the potency of their weapons, stretching the range and swelling the pay-load of their bomber aircraft and producing several generations of intercontinental ballistic missiles, (ICBM).

Along with the effort to improve the quality and enlarge the quantity of their armaments they have also struggled with the difficult task of rethinking established strategy within a nuclear context. The process of forming and reforming strategic doctrine, as well as the development and deployment of weapons systems, is often assumed to involve a high degree of Soviet-American interaction, with each country supposedly taking careful and constant note of the other's development in the design of its own strategic posture. This intimate relationship has allegedly resulted in either a kind of doctrinal plagiarism, with one side acting in imitation of some feature of the other's strategy, or has at least stimulated the adoption of countermeasures by each competitor intended to neutralise the latest modification in the strategy or force structure of the other.(2)

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(2) On the 'action-reaction' process, see Kenneth R. Whiting, 'Soviet Reactions to American Strategy', Maxwell Air Force Base, Alabama: Air University, 1965; James R. Schlessinger, Arms Interaction and Arms Control, Santa Monica, Cal.: Rand Corporation, P-3881, September 1968; Walter H. Corson, United States-Soviet Interaction, 1945-1965: A Quantitative Analysis, Ph.D. dissertation, Harvard University, 1968; George W. Rathjens, 'The Dynamics of the Arms Race', Scientific American, April 1969; Joseph G. Whelen, 'The Soviet Strategic Build-up and the American Reaction, 1967-1969: A Survey and Analysis', Legislative Reference Service, US Library of Congress, July9, 1969; Chalmers M. Roberts, The Nuclear Years: The Arms Race and Arms Control, 1945-1970. New York: F.A. Praeger, 1970; George H. Quester, Nuclear Diplomacy: The First Twenty-Five Years. New York: Dunellen, 1970; Herbert York, Race to Oblivion. New York: Simon and

Schuster, 1970; Kolkowicz, op. cit.; Colin S. Gray, 'The Arms Race Phenomenon', World Politics, XXIV, October 1971, pp.39-79; Samuel P. Huntington, 'Arms Race: Pre-requisites and Results' in R.J. Art and K.N. Waltz, ed., The Use of Force: International Politics and Foreign Policy. Boston: Little, Brown, 1971, pp.391-392; Abram Chayes, 'An Inquiry into the Workings of Arms Control Agreements', Harvard Law Review, March 1972, pp.910-919; Colin S. Gray, 'The Arms Race is About Politics', Foreign Policy, No.9, Winter 1972-73, pp.117-129; and by the same author, 'Social Science and the Arms Race', Bulletin of the Atomic Scientists, vol.XXIX, No.6, June 1973, pp.23-26; Johan J. Holst, 'Comparative US and Soviet Deployments, Doctrines and Arms Limitation', in Morton A. Kaplan, ed., SALT: Problems and Prospects. Morristown, N.J.: General Learning Press, 1973; Thomas W. Wolfe, 'Soviet Naval Interaction with the United States and its Influence on Soviet Naval Development', in Michael MccGwire, ed., Soviet Naval Developments, Centre for Foreign Policy Studies, Dalhousie University, Halifax, Nova Scotia, 1973, pp.215-245; Colin S. Gray, 'The Urge to Compete: Rationales for Arms Racing', World Politics, January 1974, pp.207-233; and by the same author, The Soviet-American Arms Race: Interactive Patterns and New Technologies. Santa Monica, Cal.: Rand Corporation, August 1974; Albert Wohlstetter, 'Is There a Strategic Arms Race?', Foreign Policy, No.15, Summer 1974; and by the same author, 'Rivals But No Race', Foreign Policy, No.16, Fall 1974; Colin S. Gray, 'Predicting Arms Race Behaviour', Futures, October 1974, pp.380-388; and by the same author, 'The Racing "Syndrome" and the Strategic Balance', Paper prepared for the International Seminar on 'The Future Role of Soviet Military Power within the East-West Political Complex', Stiftung fur Wissenschaft und Politik, Eggenberg, West Germany; Albert Wohlstetter, 'Legends of the Strategic Arms Race, Part I: The Driving Engine', Strategic Review, Fall 1974; and by the same author, 'Legends of the Strategic Arms Race, Part II: Uncontrolled Spiral', Strategic Review, Winter 1975.

The hope has been expressed in the United States that the Soviet Union would indeed emulate certain features of American doctrine. Works touching upon the 'educational' function of US doctrine include Edward Klein and Robert Littell, 'Shh! Lets Tell the Russians', Newsweek, May 5, 1969, p.47; Johan J. Holst and William Schneider, eds., Why ABM? Policy Issues in the Missile Defence Controversy. New York: Pergamon

Press, 1969, pp.161-163; Kolkowicz, op. cit.; Report of the Ad Hoc Committee on Military R & D of the Federation of American Scientists, Is There an R & D Gap? May 6, 1971; Andrew J. Pierre, 'America Down, Russia Up: The Changing Political Role of Military Power', Foreign Policy, No.4, Fall 1971, pp.163-187; Walter Darnell Jacobs, 'Soviet Strategic Effectiveness', Journal of International Affairs, vol.26, No.1, 1972, pp.60-72; William T. Lee, 'The "Politico-Military-Industrial Complex" of the USSR', Journal of International Affairs, vol.26, No.1, 1972, pp.73-86; Elizabeth Young, A Farewell to Arms Control? Middlesex, England: Penguin Books, 1972, pp.210-213; Holst, 'Comparative US and Soviet Deployments, Doctrines and Arms Limitation', op. cit., pp.53-95; Gray, 'Predicting Arms Race Behaviour', op. cit., pp.383, 384-385; Gray, 'The Racing "Syndrome" and the Strategic Balance', op. cit., pp.7-8.

The Emergence of 'Deterrence' and the 'Action-Reaction' Process

During the late 1940s and early 1950s, the United States rapidly demobilised its wartime armies but proceeded with the development of its nuclear capability. While many in civilian life may have been profoundly impressed by the power of the new weapons, the American armed services were not immediately convinced of their revolutionary effect. They continued to conceive of future wars largely in terms of their World War II experience. However, within official circles, including the Department of State and the US Air Force, the consequences of atomic and later thermonuclear power for the nation's defence policy were under study. As a result of this examination, as well as major changes in American foreign policy centering around the perception of the Soviet Union as a powerful adversary requiring 'containment', American strategic doctrine experienced very significant reform.(3)

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(3) On the development of the Cold War and the American perception of the Soviet Union as an adversary, see Gabriel Almond, The American People and Foreign Policy. New York, 1950; D.F. Flemming, The Cold War and its Origins. New York: Doubleday, 1961; Gar Alperovitz, Atomic Diplomacy: Hiroshima to Potsdam. New York: Vintage Press, 1965; Martin F. Herz, Beginnings of the Cold War. Bloomington, Ind.: Indiana University Press, 1966; Louis Halle, The Cold War as History. New York: Harper and Row, 1967; William A. Williams, The Roots of Modern American Empire. New York: Random House, 1969; Herbert Feis, From Trust to Terror: The Onset of the Cold War, 1945-1950. New York: W.W. Norton, 1970; The US Army-Air Force identification of the USSR as an adversary in 1945 is discussed in Perry McCoy Smith, The Air Force Plans for Peace, 1943-1945. Baltimore, : Johns Hopkins Press, 1970; Raymond Aron, The Imperial Republic. London: Weidenfeld and Nicholson, 1973.

Following generations of military planning based upon a mobilisation concept, with only a vague connection understood to exist between foreign policy objectives and peacetime military capabilities,(4) by the end of the Truman Administration the concept of 'nuclear deterrence' had emerged within some of the nation's highest policy-making bodies. It was now argued by many in government that the United States required the permanent maintenance of large combat-ready nuclear forces, not simply to destroy an attacker, but primarily to 'deter' potential enemies from launching an attack. After considerable scepticism about the significance of nuclear weapons and the feasibility of deterrence, America's political and military leadership under the so-called 'New Look' and 'massive retaliation' policies of the 1950s, largely accepted nuclear weaponry as the basis of both the now officially adopted concept of deterrence, as well as

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(4) On the traditional American failure to associate peacetime military capabilities with foreign policy objectives, see Hans Morgenthau, In Defence of the National Interest. New York: Knopf, 1951; George Kennan, American Diplomacy, 1900-1950. New York: New American Library, 1952; Reinhold Niebuhr, The Irony of American History. New York: Scribner, 1952; Gordon B. Turner, 'Classic and Modern Strategic Concepts' in Gordon B. Turner and Richard D. Challener, eds., National Security in the Nuclear Age. New York: F.A. Praeger, 1960, pp.3-30; John Spanier, American Foreign Policy Since World War II. New York: F.A. Praeger, 1965.

the key to the successful defence of the United States.(5)

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(5) On the emergence of deterrence in the United States and the development of the Eisenhower 'New Look' policy, see Bernard Brodie, The Absolute Weapon: Atomic Power and World Order. New York: Harcourt Brace, 1946; John Foster Dulles, 'The Evolution of Foreign Policy', Department of State Bulletin XXX, No.761, January 25, 1954, pp.107-110; Joseph and Stewart Alsop, 'New Look: Secret History', New York Herald Tribune, February 22, 1954; John Foster Dulles, 'Policy for Security and Peace', Foreign Affairs, XXXII, No.3, April 1954, pp.353-364; A.J. Wohlstetter, F.S. Hoffman, R.J. Lutz and H.S. Rowen, Selection and Use of Strategic Air Bases. Santa Monica, Cal.: Rand Corporation, R-246, April 1954; Thomas K. Finletter, Power and Policy. New York: Harcourt Brace, 1954; 'The Eisenhower Shift, Part I', Fortune, LIII, January 1956, pp.82-87; Part II, Ibid., LIII, February 1956, p.110; Part III, Ibid., LIII, March 1956, p.110; Robert J. Donovan, Eisenhower: The Inside Story. New York: Harper, 1956; Robert Osgood, Limited War. Chicago: University of Chicago Press, 1957; Samuel P. Huntington, The Common Defence. New York: Columbia University Press, 1961; Robert Gilpin, American Scientists and Nuclear Weapons Policy. Princeton, N.J.: Princeton University Press, 1962; Warner R. Schilling, Paul Y. Hammond and Glenn H. Snyder, Strategy Politics and Defence Budgets. New York: Columbia University Press, 1962; Dwight D. Eisenhower, The White House Years: Mandate for Change 1953-1956. Garden City, N.Y.: Doubleday, 1963; Bernard Brodie, Strategy in the Missile Age. Princeton, N.J.: Princeton University Press, 1965; Edward A. Kolodziej, The Uncommon Defence and Congress, 1945-1963. Ohio State University Press, 1966; Urs Schwarz, American Strategy: A New Perspective. Garden City, N.Y.: Doubleday, 1966; Quester, op. cit.; Edgar M. Bottome, The Balance of Terror. Boston, Beacon Press, 1971.

In the early post war years the Soviet Union worked energetically to end the US atomic monopoly and to acquire a long-range strike capability.(6) However, like their American counterparts, Soviet commanders were not at once aware of the radical changes which atomic weapons were to bring to modern strategic thought, preferring instead to rely on the lessons learned in the USSR's great struggle - basically land warfare - against Nazi Germany. The conservatism of many senior soldiers, added to the rigid enforcement of 'Stalinist Military Science' as the unquestionable sum total of strategic wisdom, effectively forbade any

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(6) On Soviet weapons research, see 'I Design for Russia', RAF Flying Review, vol.12, November 1950, pp.17-18; 'Russia's Designers', Aviation Age, vol.16, No.1, July 1951, pp.6-18, 23-26; Chalmers H. Godlin, 'Evolution of Russia's Fighters', Aviation Age, vol.16, August 1951, pp.15-20; 'Russia's A-bomber', Flying, vol.49, December 1951, pp.11-13, 60; G.A. Takaev, Stalin Means War. London: Weidelfeld and Nicholson, 1951; Raynolds Phillips, 'Russia's Intercontinental Bomber', Boeing Magazine, vol.22, March 1952, pp.3-5; J.R. Shepley and C. Blair, Jr., The Hydrogen Bomb. New York: David McKay, 1954; Andrew S. Haley, Rocketry and Space Exploration. Princeton, N.J.: Van Nostrand, 1958; Arnold Kramish, Atomic Energy in the Soviet Union. Stanford, Cal.: Stanford University Press, 1959; Asher Lee, ed., The Soviet Air and Rocket Forces. New York: F.A. Praeger, 1959; Albert Parry, Russia's Rockets and Missiles. London: Macmillan, 1960; Asher Lee, The Soviet Air Force. London: Duckworth, 1961; R.A. Kilmarx, A History of Soviet Air Power. London: Faber and Faber, 1962; Eugene Emme, ed., The History of Rocket Technology. Detroit: Wayne State University Press, 1963; Lansing Lamont, Day of Trinity. New York: Atheneum, 1965; G.A. Tokaty-Tokaev, 'Foundations of Soviet Cosmonautics', Spaceflight, October 1968, pp.335-346; Robert Jackson, The Red Falcons. London: Clifton Brodie, 1970; 'The Billion Dollar Bomber', Parts I and II, Air Enthusiast, vol.1, Nos. 2 and 3, July and August, 1971; Michael Stoiko, Soviet Rocketry. Newton Abbot: David and Charles, 1971.

reconsideration of strategic doctrine in the light of the latest weapons developments and prevented the Soviet armed forces from preparing for the conduct of nuclear warfare.(7) While strategic doctrine remained 'frozen' in its Stalinist form, the early postwar years recorded significant changes in Soviet foreign policy as the wartime alliance between east and west rapidly deteriorated and the United States was established as the Soviet Union's prime adversary.(8)

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(7) On Soviet strategic doctrine in the postwar Stalin period, see R.L. Garthoff, How Russia Makes War. London: George Unwin, 1954; and by the same author, Soviet Strategy in the Nuclear Age. New York: F.A. Praeger, 1958, and The Soviet Image of Future War. Washington: Public Affairs Press, 1959; Kenneth Whiting, 'Post-War Strategy' in Asher Lee, ed., The Soviet Air and Rocket Forces, op. cit., pp.89-90; H.S. Dinerstein, War and the Soviet Union. New York: F.A. Praeger, 1962; J.M. Mackintosh, Strategy and Tactics of Soviet Foreign Policy. London: Oxford University Press, 1962; T.W.Wolfe, Soviet Strategy at the Crossroads. Cambridge, Mass.: Harvard University Press, 1964; J.M. Mackintosh, 'The Development of Soviet Military Doctrine since 1918' in Michael Howard, ed., The Theory and Practice of War. London: Cassell, 1965; and by the same author, Juggernaut, London: Secker and Warburg, 1967; T.W. Wolfe, Soviet Power and Europe, 1945-1970. Baltimore, Md.: Johns Hopkins, 1970.

(8) On Soviet foreign policy in the early postwar period, see Ivo J. Lederer, ed., Russian Foreign Policy. New York: Yale University Press, 1962; Mackintosh, Strategy and Tactics of Soviet Foreign Policy, op. cit.; Marshall D. Schulman, Stalin's Foriegn Policy Re-appraised. Cambridge, Mass.: Harvard University Press, 1963; Adam Ulam, Expansion and Co-existence: The History of Soviet Foreign Policy. New York: F.A. Praeger, 1968; Jan F. Triska and David D. Finely, Soviet Foreign Policy. New York: Macmillan, 1968; Adam B. Ulam, The Rivals. New York: The Viking Press, 1971.

Stalin's death opened the long overdue re-examination of defence policy which eventually resulted in nuclear weapons assuming a prominent place in Soviet strategy. The post-Stalin leadership contest between Party Chairman Khrushchev and Premier Malenkov touched upon a number of important defence issues, including the relative significance of nuclear weapons and conventional forces, as well as the adequacy of a strategy of 'mutual deterrence'.

Although still retaining a number of its traditional features, by 1955 Soviet doctrine had undergone significant modification. The uncompromising rigidity of the Stalin period and the refusal to recognise the great significance of nuclear weapons had been rejected. The Soviet Union had achieved a more realistic understanding of air-nuclear power, integrating the new technology into its armed forces and strategic doctrine. Serious consideration had been given to the need for a pre-emptive capability and the danger of surprise attack, and a variety of the 'deterrence' concept through nuclear forces-in-being, while failing to win

acceptance, had at least been formulated by Premier Malenkov.(9)

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(9) On the post-Stalin strategic debate and the development of Soviet doctrine during the years in which the 'deterrence' concept first emerged, see 'New Soviet Military Strategy', Military Review, vol.34, April 1954, p.89; 'Marshal Vasilevskii on the Atomic Problem', Bulletin, Institute for the Study of USSR, November 1954, p.30; Jules Menken, 'Soviet Policy and War' in Brassey's Annual, The Armed Forces Yearbook, 1954. New York: Macmillan, 1954, pp.59-74; R.L. Garthoff, 'Significant Features of Soviet Military Doctrine', Military Review, vol.43, March 1955, pp.3-13; F. Isayev, 'The "Small Atomic Weapons" Myth', New Times, March 26, 1955, pp.7-10; Nikolai Galay, 'Problems of Atomic Warfare and the Soviet Armed Forces', Bulletin, Institute for the Study of USSR, vol.2, April 1955, pp.3-10; R.L. Garthoff, 'Soviet Attitudes toward Modern Air Power', Military Affairs, vol.19, Summer 1955, pp.76-80; Nikolai Galay, 'New Trends in Soviet Military Doctrine', Bulletin, Institute for the Study of USSR, June 1956, pp.3-12; G.I. Pokrovskii, 'Atomic Deadlock?', Moscow News, No.6, 1956, pp.13-14; Nikolai Galay, 'Soviet Military Thinking since Stalin', Army, vol.7, September 1956, pp.59-61; Garthoff, Soviet Strategy in the Nuclear Age, op. cit.; Garthoff, The Soviet Image of Future War, op. cit.; Dinerstein, op. cit.; T.W. Wolfe, Soviet Strategy at the Crossroads, Cambridge, Mass.: Harvard University Press, 1964; A. Horelick and M. Rush, Strategic Power and Soviet Foreign Policy. Chicago: University of Chicago Press, 1966; Wolfe, Soviet Power and Europe, op. cit.

'Time-Lag' and its Relevance

By the mid-1950s, both the United States and the Soviet Union had recognised the formidable importance of nuclear weapons. However, the Stalinist 'freeze' on strategic thought had delayed the development of a Soviet nuclear doctrine during the period in which the United States began the evolution of a concept of 'nuclear deterrence'. This delay - which can be measured and defined - imposed a specific 'lag' on Soviet doctrinal development from the outset.(10) It might be said, therefore, that 'reaction' was built into the Soviet-American relationship from the start. The case can be made most easily with respect to technology in general terms, and even in the initial approaches to 'doctrine', but thereafter a deal of caution must be exercised. For example, Soviet strategic forces were not designed or structured upon principles wholly consonant with US premises; the Soviet requirement to deal with local

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(10) On the 'time-lag' issue, see Garthoff, Soviet Strategy in the Nuclear Age, op. cit., pp.89-91; Roman Kolkowicz, Soviet Strategy in the Nuclear Era. Institute for Defence Analysis, IDA, N-789, September 1970; and by the same author, The Soviet Union and Arms Control. Baltimore: Johns Hopkins Press, 1970; 'Strategic Parity and Beyond', op. cit., pp.439-440; 'Strategic Elites and Politics of Superpower', Journal of International Affairs, vol.26, No.1, 1972, pp.42, 48-49, 53; Gray, 'Predicting Arms Race Behaviour', op. cit., p.385.

adversaries (in Europe, possibly in Asia) produced a different force configuration. In short, the criteria for Soviet strategic effectiveness (viewed from the Soviet side) must and do diverge from those stipulated by the United States; the question is - How far do they diverge?

In tracing the history of the postwar period, it is possible to identify a number of developments in the Soviet-American strategic relationship which can be interpreted as reactions by one side to some feature of the other's strategic doctrine or force structure, with the Soviet Union apparently continuing to 'lag' behind her major adversary in the development of strategic ideas for several years. For example, it is arguable that the first emergence of the 'deterrence' concept in the USSR, as well as the subsequent adoption of a Soviet version of an essentially 'New Look' - 'massive retaliation' posture in the late 1950s, were emulative reactions to policies already established in the United States.(11)

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(11) On the development of Soviet defence policy under Premier Khrushchev during the late 1950s and early 1960s, see Issac Deutscher, 'The New Soviet Strategy', The Reporter, October 3, 1957, pp.10-12; Nikolai Galay, 'Guided Missiles and Soviet Military Doctrine', Bulletin, Institute for the Study of USSR, October 1957, pp.14-21; Dinerstein, 'The Revolution in Soviet Strategic Thinking', Foreign Affairs, vol.36, January 1958, pp.241-252; 'Range of Our Missiles Worldwide, Warns Marshal Malinovskii', Air Force Times, vol.18, March 8, 1958, p.6; Garthoff, 'Missiles in Soviet Strategy', Air Force, vol.41, July 1958, pp.91-92; Dinerstein, On the Question of the Pre-emptive Blow by General of the Army V. Kurasov. Santa Monica, Cal.: Rand Corporation, 1958; Garthoff, Soviet

Strategy in the Nuclear Age, op. cit.; Leon Goure, Some Soviet Views on Air Strategy. Santa Monica, Cal.: Rand Corporation, 1958; Kenneth R. Whiting, 'The Past and Present of Soviet Military Doctrine', Air University Quarterly Review, vol.11, No.1, Spring 1959, pp.38-60; J. Baritz, 'Soviet Military Theory and Modern Warfare', Bulletin, Institute for the Study of USSR, May 1959, pp.12-20; Alvin J. Cottrell, 'The Strategy of Controlled Warfare - Soviet Style', Army, vol.1, May 1959, pp.37-97; Garthoff, 'Soviet Military Doctrine on the Decisive Factors in Modern War', Military Review, vol.39, July 1959, pp.3-22; and by the same author, 'Soviet Strategy, Flexibility, Firepower, Follow-up', Army, vol.10, August 1959, pp.38-43; V. Larionov, 'The Doctrine of Aggression in Doses', Survival, vol.1, No.4, September-October 1959, pp.135-136; Garthoff, 'Surprise and Blitzkrieg in Soviet Eyes', Royal Canadian Air Force Staff College Journal, 1959, pp.16-29; Thomas R. Phillips, 'Their "New" Looks and Ours', Army, vol.10, March 1960, pp.29-31; J.F.L. Long, 'The Missile vs. the Bomber: Khrushchev's Choice', Air Power, vol.7, Summer 1960, pp.277-281; Dinerstein, 'Current Soviet Strategic Ideas', Soviet Survey, October-December 1960, pp.74-79; A.L. Horelock, 'Deterrence and Surprise Attack in Soviet Strategic Thought', Royal Canadian Air Force Staff College Journal, December 1960, pp.21-58; Dinerstein, Soviet Strategic Ideas. Santa Monica, Cal.: Rand Corporation, 1960; Kenneth R. Whiting, 'Soviet Military Doctrine and the 22nd Party Congress', Air University Quarterly Review, vol.13, Fall 1961, pp.99-103; 'Defence Minister Malinovskii tells Soviet Military Doctrine: Nuclear-Rocket Warfare "Inescapable" ', Army, Navy, Air Force Journal, vol.99, November 4, 1961, p.2; Nikolai Galay, 'Khrushchev's Military Doctrine', Bulletin, Institute for the Study of USSR, March 1962, pp.45-48; I. Sidelnikov, 'On Soviet Military Doctrine', Air University Quarterly Review, vol.13, Summer 1962, pp.142-150; J.F.L. Long, 'New Emphasis on the USSR's Strategic Rocket Forces', Royal Air Force Quarterly, vol.2, Winter 1962, pp.263-267; Dinerstein, War and the Soviet Union, op. cit.; R.D. Crane, ed., Soviet Nuclear Strategy. Washington: Georgetown University Centre for Strategic Studies; Murray Green, Soviet Military Strategy Brought Up to Date. Washington: US Department of the Air Force, 1963; Mackintosh, Strategy and Tactics of Soviet Foreign Policy, op. cit.;

V.D. Sokolovskii, ed., Soviet Military Strategy. Santa Monica, Cal.: Rand Corporation, R-416-PR, 1963; Robert N. Ginsburgh, 'The New Soviet Military Strategy', United States Naval Institute Proceedings, vol.90, January 1964, pp.122-125; T.W. Wolfe, 'Some New Developments in the Soviet Military Debate', Orbis, vol.8, No.3, Fall 1964, pp.550-562; William Zimmerman, 'Sokolovskii and His Critics', Journal of Conflict Resolution, vol.8, September 1964, pp.322-328; William E. Odom, 'Sokolovskii's Strategy Revisited', Military Review, vol.44, October 1964, pp.49-53; Roman Kolkowicz, Soviet Strategic Debate: An Important Recent Addendum. Santa Monica, Cal.: Rand Corporation, 1964; Wolfe, Soviet Military Strategy at the Crossroads, op. cit.; Roman Kolkowicz, The Soviet Army and the Communist Party: Institutions in Conflict. Santa Monica, Cal.: Rand Corporation, R-446-PR, August 1966; Lincoln P. Bloomfield, Walter C. Clemens, Jr., and Franklyn Griffiths, Khrushchev and the Arms Race. Cambridge, Mass.: The MIT Press, 1966; Horelick and Rush, op. cit.; Michael P. Gehlen, The Politics of Co-existence. Bloomington, Ind.: Indiana University Press, 1967; William R. Kintner, and Harriet Fast Scott, eds., The Nuclear Revolution in Soviet Military Affairs. University of Oklahoma, 1968; Kolkowicz, Soviet Strategy in the Nuclear Era, op. cit.; Wolfe, Soviet Power and Europe, op. cit.; Kolkowicz, 'Strategic Parity and Beyond', op. cit.

The much later Soviet commitment to a 'war-waging' capability and a kind of 'flexible response' might also be explained as a reaction to the prior American development of these concepts.(12) Instances of US 'reaction' to the Soviet Union might be said to include the American response to the first major Russian ICBM deployment during the early 1960s which brought a gradual reduction in the American commitment to strategic superiority, and nuclear 'war-winning' and encouraged the acceptance of strategic 'parity' and 'stable

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(12) On the period in which Soviet doctrine developed a 'war-waging' objective, see T.W. Wolfe, 'Shifts in Soviet Strategic Thought', Foreign Affairs, April 1964, pp.34-46; and by the same author, The Soviet Union Six Months after Khrushchev's Fall. Santa Monica, Cal.: Rand Corporation, 1964; Soviet Strategic Thought in Transition. Santa Monica, Cal.: Rand Corporation, 1964; Nikolai Galay, 'The Soviet Armed Forces on the Threshold of a New Era', Bulletin, Institute for the Study of USSR, vol.12, April 1965, pp.15-20; John Erickson, 'Detente, Deterrence and "Military Superiority": A Soviet Dilemma', World Today, August 1965, pp.337-345; T.W. Wolfe, Soviet Military Theory: An Additional Source of Insight into Its Development. Santa Monica, Cal.: Rand Corporation, P-3258, November 1965; and by the same author, 'Impact of Khrushchev's Downfall on Soviet Military Policy and Detente' in Eleanor Lansing Dulles, ed., Detente: Cold War Strategies in Transition. New York: F.A. Praeger, 1965; Problems of Soviet Defence Policy under the New Regime. Santa Monica, Cal.: Rand Corporation, 1965; Richard F. Staar, 'Current Soviet Military Strategy', Naval War College War Review, vol.18, January 1966, pp.1-23; Roman

Kolkowicz, The Red 'Hawks' on the Rationality of Nuclear War. Santa Monica, Cal.: Rand Corporation, RM-4899-PR, March 1966; Horelick and Rush, op. cit.; John Erickson, 'Nuclear Strategy: World Dilemma' in John Erickson, ed., The Military Technical Revolution: Its Impact on Strategy and Foreign Policy. New York: F.A. Praeger, 1966, pp.1-20; John R. Thomas, 'The Role of Missile Defence in Soviet Strategy and Foreign Policy' in Ibid.; T.W. Wolfe, Soviet Military Policy Under Khrushchev's Successors. Santa Monica, Cal.: Rand Corporation, 1966; Benjamin S. Lambeth, The Argument for Superiority: A New Voice in the Soviet Strategic Debate, Institute for Defence Analyses, N-419 R, January 1967; Kolkowicz, The Dilemma of Superpower: Soviet Policy and Strategy in Transition, op. cit.; Kintner and Scott, op. cit.; Malcolm Mackintosh, 'Soviet Strategic Policy', The World Today, July 1970, pp.269-276; Kolkowicz, Soviet Strategy in the Nuclear Era, op. cit.; Kolkowicz, The Union and Arms Control, op. cit.; Wolfe, Soviet Power and Europe, op. cit.; John Erickson, 'The Soviet Weapons Build-up, 1965-1970/71: Roles and Capabilities in the Present Stage of Soviet Global Expansion: Sources, Goals and Prospects', Papers Presented at the Fifth Soviet Affairs Symposium held at the US Army Institute for Advanced Russian and East European Studies in Garmish-Partenkirchen, Germany, 20-22 April, 1971, A.P.O. New York: US Army Institute for Advanced Russian and East European Studies, 1971; Kolkowicz, 'Strategic Parity and Beyond', op. cit.; Kolkowicz, 'Strategic Elites and Politics of Superpower', op. cit.; John Erickson, 'Soviet Military Power', Strategic Review, Spring 1973, pp.1-127.

deterrence' as the central objectives of US policy.(13)

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(13) On the development of American defence policy during the 1960s, see Stewart Alsop, 'Kennedy's Grand Strategy', Saturday Evening Post, March 31, 1962; Michael Brower, 'Controlled Nuclear War', New Republic, CXLVII, No.4, July 30, 1962, pp.9-15; and by the same author, 'Nuclear Strategy of the Kennedy Administration', Bulletin of the Atomic Scientists, XVIII, October 1962, pp.35-41; 'McNamara Sees Gains in Defence But Cites Perils', New York Times, January 31, 1963, p.1; 'McNamara Tells Defence Policy', New York Times, March 30, 1963, p.4; Alain Enthoven, 'American Deterrent Policy', Survival, vol.V, No.3, May-June 1963; 'McNamara Declares West Holds Strong Arms Lead', New York Times, November 19, 1963; Testimony of Secretary McNamara in US House of Representatives, Committee on Armed Services, Hearings on Military Posture, Washington, D.C.: US Government Printing Office, 1963; US Department of Defence, Statement by Secretary of Defence Robert S. McNamara before the House Armed Services Committee on the FY 1965-1969 Defence Programme and 1965 Defence Budget, January 27, 1964; 'McNamara Seeks Forces Sufficient to Crush Red Block', New York Times, January 28, 1964 p.1; Harold B. Moulton, 'The McNamara General War Strategy', Orbis, VIII, No.2, Summer 1964, pp.235-254; William W. Kaufman, The McNamara Strategy. New York: Harper and Row, 1964; Hugh Sidney, John F. Kennedy: President. New York: Crest, 1964; US Department of Defence, Statement by Secretary of Defence Robert S. McNamara before the House Armed Services Committee on the FY 1966-1970 Defence Programme and the 1966 Defence Budget, February 18, 1965; 'McNamara Fears 220 Million Toll', New York Times, February 19, 1965, p.1.; 'Pentagon's "New" Policy', New York Times, February 27, 1965, p.8; Arthur Schlessinger, A Thousand Days. Boston: Houghton Mifflin, 1965; Theodore Sorenson, Kennedy. New York: Harper and Row, 1965; Kolodziej, op. cit.; Daniel Lang, An Inquiry into Enoughness. London: Secker and Warburg, 1966; Schwarz, op. cit.; Brower Brock, 'McNamara Seen Now, Full Length', Life, May 19, 1968, p.80; Robert S. McNamara, The Essence of Security. New York: Harper and Row, 1968; Ralph E. Lapp, Arms Beyond Doubt. New York: Cowles, 1970; Quester, op. cit.; Bottome, op. cit.; Alain C. Enthoven and K. Wayne Smith, How Much is Enough? New York: Harper and Row, 1971; Henry L. Trewitt, McNamara. New York: Harper and Row, 1971; Desmond Ball, The Strategic Missile Programme of the Kennedy Administration, 1961-1963', Ph.D. dissertation, Australian National University, June 1972; Young, op. cit.; Fred Charles Ikle, 'Can Nuclear Deterrence Last Out the Century', Foreign Affairs, January 1973, pp.267-285; Holst, 'Comparative US and Soviet Deployments', op. cit.; Moulton, From Superiority to Parity. Westport, Conn.: Greenwood Pressm 1973.

The reversal in the American attitude to ballistic missile defence during the late 1960s might also be identified as a reaction to the heavy Soviet deployment of both offensive and defensive systems following the retirement of Premier Khrushchev.(14)

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(14) On the development of US policy on missile defence, see Freeman J. Dyson, 'Defence Against Ballistic Missiles', Bulletin of the Atomic Scientists, XX, June 1964, pp.12-18; US Department of Defence, Statement by Secretary of Defence, Robert S. McNamara before the House Armed Services Committee on the FY 1966-1970 Defence Programme and the 1966 Defence Budget, February 18, 1965; US Congress, Committee on Armed Service, Hearings on Military Posture, 89th Congress, 1st session, 1965; US Congress, Senate Sub-committee on Department of Defence Appropriations and the Committee on Armed Services, Hearings on Department of Defence Appropriations, 1966, 89th Congress, 1st session, 1965; US Congress, House, Sub-committee of the Committee on Appropriations, Hearings on Department of Defence Appropriations for 1966, 89th Congress, 1st session, 1965, Part 3; Statement of Secretary of Defence Robert S. McNamara before a Joint Session of the Senate Armed Services Committee and the Senate Sub-committee on Department of Defence Appropriations on the FY 1968-1972 Defence Programme and 1968 Defence Budget, January 23, 1967; Norman Moss, 'McNamara's ABM Policy: A Failure of Communications', The Reporter, February 23, 1967; Richard J. Whalen, 'The Shifting Equation of Nuclear Defence', Fortune, June 1, 1967; pp.85-87, 175-183; D.G. Brennan and J.J. Holst, Ballistic Missile Defence: Two Views, Adelphi Paper, No.43. London: Institute for Strategic Studies, November 1967; Daniel J. Fink, 'Strategic Warfare', Science and Technology, October 1968, pp.54-68; Jeremy J. Stone, The Case Against Missile Defence. Adelphi Paper No.47, London: Institute for Strategic Studies, 1968; C.F. Barnaby and A. Boserup, ed., Implications of Antiballistic Missile Systems. Pugwash Monograph II. London: Souvenir Press, 1969; Donald G. Brennan, The Case for

Missile Defence', Foreign Affairs, XLVII, April 1969; Johan J. Holst and William Schneider, Jr. Eds., Why ABM: Policy Issues in the Missile Defence Controversy. New York: Pergamon Press, 1969; William Kintner, ed., Safeguard: Why the ABM Makes Sense. New York: Hawthorne, 1969; Abram Chayes and Jerome Wiesner, eds., ABM: An Evaluation of the Decision to Deploy an Anti-Ballistic Missile System. New York: New American Library, 1969; The Safeguard ABM System. Washington: American Enterprise Institute for Policy Research, 1969;

Lawrence W. Martin, 'Ballistic Missile Defence and the Strategic Balance' in John Garnett, ed., Theories of Peace and Security. London: Macmillan, 1970, pp.113-119; Lapp, op. cit., pp.35-48; York, op. cit., pp.188-195; Bottome, op. cit., pp.126-129; Morton H. Halperin, The Decision to Deploy the ABM: Bureaucratic and Domestic Politics in the Johnson Administration. Washington: Brookings Institute, 1971; Young, op. cit., pp.179-199; Moulton, From Superiority to Parity, op. cit., pp.176-180, 214, 232-236; John Newhouse, Cold Dawn. New York: Holt, Rinehart and Winston, 1973, pp.81-95.

'The Language of the Process' :

Semantics and Linguistics

Despite evidence of some responsiveness in the Soviet-American strategic relationship, any model of the 'arms race' which describes the operation of 'action-reaction' as an acutely sensitive process of stimulus followed by directly counter-balancing or emulative response is compromised by several factors which clearly obstruct its sharply responsive functioning. Among the complications impeding the effective exercise of 'action-reaction' is the semantic or linguistic factor, for although the terminology of both the Soviet and American strategic communities may appear to be rooted in 'deterrence' - this is not to suppose that the deterrence necessarily means the same thing to both sides. There is, indeed, a range of semantic-linguistic distinctions which are important in Soviet usage (and the American usage is constantly modified and adapted).

East-west strategic understanding is complicated by the absence of any single word in the Russian language equivalent to the English verb 'to deter', with of course consequent difficulty in expressing either 'deterrent' or 'deterrence', in a manner which fully comprehends the English definitions. The problem is not helped by the Soviet use of more than one Russian word in place of the English 'deterrence', each with

its own shade of meaning. While '_sderzhivanie_' or 'restraining' is widely used in the Soviet Union, at least as regards Soviet deterrence of imperialist attack, the term '_ustrashenie_' or 'intimidation' (with strong overtones of 'terrorising') offers a far more forceful notion of deterrence. If '_ustrashenie_' is understood to be the objective of the imperialist powers, then the Russians would not likely accept 'being deterred' as a condition of safety or equity. Does one 'deter' or is not 'being deterred' an important indicator of position and stature on the world strategic stage?: The Soviet preference would appear (for all the inherent distaste which the Soviet military shows for the deterrent concept at large) to be for an active 'deterring' role as opposed to 'being deterred'.(15)

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(15) The widespread usage of the word 'deterrence' in western discussions of both Soviet and American strategic doctrines must not lead to any assumption of simple equivalency or interchangeability between the English and Russian terms used to express the concept. On the contrary, the semantics, indeed linguistics of deterrence present formidable problems. There is no word in Russian which conveys precisely the same meaning as the English word 'deterrence', meaning 'to frighten from', or 'frighten away', stemming from the Latin 'deterrere', The nearest Russian equivalent is, perhaps, '_ustrashenie_', meaning 'intimidation'. If 'intimidation' is taken as the essence of American deterrence, it is unlikely that the USSR would ever accept 'being deterred' as a condition of either safety or equity. The Russians themselves never use '_ustrashenie_', with the emotive overtones, to describe Soviet deterrence. Instead, the Soviet deterrent effort is labelled as '_sderzhinaniye_', meaning 'restraining', or '_oborona_' meaning 'defence'. Carefully distinguishing between Russian and English

It is not enough to assert 'that the primary objective of nuclear strategy is to avoid nuclear wars, not to fight them'.(16) This is the hub of the matter: it cannot be asserted with real confidence that that is the starting point of the Soviet view. So to assert or to assume is to beg the entire question.

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terminology is not the pedantic exercise which it may appear to be but, in fact, reflects fundamental differences between the Soviet and American interpretations of deterrence. For several years the American version of deterrence has rested upon little more than the ability of each of the superpowers to obliterate the other. In marked contrast the Russian concept is based upon the ability actually to 'wage' nuclear war, not merely to exchange equally devastating blows but to launch a powerful offensive initial blow (possibly even pre-empting), while also providing for the effective defence - 'oborona' - of the Soviet Union, limiting the degree of damage inflicted upon the USSR and ensuring the survival of Soviet society. In a sense, therefore, deterrence and 'defence' can be co-terminous in Soviet usage and certainly this is not infrequently the case. The use of the term 'deterrence' in other European languages includes the French 'dissuasion' and the German 'Abschreckung', often translated as 'deterrence', but, as with 'ustrashenie', also meaning 'intimidation'.

(16) Barry Carter, 'Nuclear Strategy and Nuclear Weapons', Scientific American, May 1974, pp.20-31;

Strategic Doctrine: Declaratory and Operational

The smooth operation of 'action and reaction' has also been inhibited by disparities between strategic doctrine as publicly declared and operational doctrine as suggested by deployments and capabilities. Careful distinction between declaratory and operational doctrines is necessary as declaratory doctrine is often intended to achieve objectives other than the instruction of commanders. It may be designed primarily to affect the attitudes and policies of several foreign and domestic audiences, rather than to reflect operational intentions and capabilities.(17) For example, during the late 1950s and early 1960s Mr. Khrushchev put forward a declaratory doctrine dramatically at odds with the USSR's operational capabilities. In an effort to maximise the potency of Soviet deterrence the Premier boasted of a devastating missile-nuclear capability, as well as of a solution to the problem of missile defence. 'Received' military doctrine spoke of the conduct of wars of considerable duration. However, despite these bold assertions, the USSR

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(17) On the relationship between declaratory doctrine and operational doctrine, see George H. Quester, 'On the Identification of Real and Pretended Communist Military Doctrine', Conflict Resolution, vol.X, No.24, June 1966, pp.172-179.

was, in fact, attached to a policy of 'minimum deterrence', and disposed of only a very small quantity of offensive nuclear armament. In reality, the Soviet Union had deployed only a 'short-war' capability, apparently accepting a position of long-term strategic inferiority in offensive weapons, while failing to develop any effective defence against ballistic missiles. Further, the forceful Soviet rejection of American proposals on counterforce targeting and the concept of limited nuclear warfare during the Khrushchev period, may well have been determined by more than the professional military judgement that the American 'rules' for nuclear warfare were unworkable. It may also have been inspired by the USSR's clear inability to launch a counterforce strike with its much inferior force of ICBMs.(18)

A number of disparities between declaratory and operational doctrine also appear on the American side. There is some basis for doubting whether the strategy of 'massive retaliation', although sometimes described as effective against a wide range of threats, was ever actually regarded as useful in any but the most desperate circumstances. Indeed, the entire 'new Look' is open to question on a number of points.

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(18) Khrushchev's minimal nuclear force levels noted in Charles J.V., 'Khrushchev's Paper Bear', Fortune, December 1964; Oleg Penkovsky, The Penkovsky Papers. London: Collins, 1965; Horelick and Rush, op. cit; Wolfe, Soviet Power and Europe, op. cit., pp.181-183.

Considering the gradual shift to nuclear power in the final days of the Truman Administration, the genuine originality or 'newness' of the 'New Look' in American defence policy is debatable, as is the strategic rationale publicly offered in its support by an administration keenly interested in reduced defence spending and a balanced national budget.(19) In the latter half of the 1950s, official assertions of a broad range of military capabilities were questionable in the light of existing conventional force levels.(20)

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(19) Elie Abel, '"Pros" in Pentagon Cool to New Look', New York Times, January 24, 1954, p.25; James Reston, 'Indo-China Events Stir Test of New Strategy in Senate', New York Times, February 15, 1954, p.1; 'Ridgeway Has Reservations on Slash in Army Strength', New York Times, March 16, 1954, p.1; Hanson W. Baldwin, 'Capitol Debate Casts New Light on "New Look"', New York Times, March 21, 1954, section IV, p.3; William S. White, 'Democrats Brand New Look Defence Unsafe for Nation', New York Times, March 31, 1954, p.1.

(20) Criticisms of American policy questioning administration assertions of a broad range of capabilities included Matthew Ridgway, Soldier. New York: Harper & Bros., 1956; Osgood, Limited War, op. cit.; and by the same author, 'Limited War Strategy', Army, IX, December 1958, pp.53-54; James M. Gavin, War and Peace in the Space Age. London: Hutchinson, 1959; Maxwell Taylor, The Uncertain Trumpet. New York: Harper & Bros., 1959.

The American discussion of the virtues of counterforce versus countercity targeting strategies, involving the formal adoption of one or other posture at various times, may have reflected significant shifts in the targeting assignments of US offensive forces. On the other hand, these public postures may have involved little more than official labelling and re-labelling. The US Air Force and Navy very likely retained a generously mixed targeting plan regardless of the declaratory targeting vogue of the moment, defending individual service interests and investments in established doctrines and force structures.(21)

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(21) Lapp, op. cit., pp.21-22; Carter, op. cit., pp.20-23.

Doctrinal Requirements

Strategic doctrine, as well as degrading the efficient performance of 'action-reaction' through the effects of its often conflicting operational and declaratory varieties, has also obstructed the exercise of 'stimulus and response' by inspiring the competitors to launch strategic initiatives in response to the requirements of their own doctrines. In other words, a decision to deploy or not to deploy a weapons system may represent a 'reaction' to the demands of a competitor's own definition of strategic effectiveness. The massive build-up in the US ICBM arsenal during the early 1960s, a time of minimal Soviet deployments, can be seen as primarily a 'response' to the strategic objectives which the United States had established for itself.(22) The later US ban on ballistic missile defence was also related to the American commitment to 'stable deterrence'.(23)

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(22) Young, op. cit., pp.172-173.

(23) Quester, Nuclear Diplomacy, pp.275-276.

Uncertainty

Perhaps one of the most significant impediments to the effective operation of 'action-reaction' has been the ever-present uncertainty of each competitor as to the capabilities and intentions of the other. Lacking totally reliable intelligence about the adversary's existing capabilities - particularly before the development of reconnaissance satellites - and assisted by often unreliable forecasts of future deployments, strategic planners have often been hard put to fulfil their obligations under the action-reaction thesis. Rather than deftly shaping doctrine and force levels to those of the other side, they have often been reduced to planning on the basis of erroneous estimates of the competitor's future intentions, capabilities and performance levels. This element of uncertainty has not only produced unintentional over-reactions or, conversely, strategic shortfalls through gross predictive errors, but has also encouraged each side to allow for miscalculations in its estimates of the other's future strength through 'worst-case' planning. The 'worst-case' approach has resulted in the deliberate deployment of forces larger than those apparently required by the projected capabilities of the other

side in an effort to compensate for possible errors in prediction.(24)

While it is very difficult to acquire conclusive evidence of Soviet predictive errors, the postwar history of American strategic planning is replete with false prophecies. During the late 1940s, the United States was distressed by the Soviet conduct of atomic and hydrogen bomb tests several years before American analysis had thought it possible for the USSR to develop nuclear weapons. The United States was similarly disturbed by the 'premature' Soviet development of strategic bombers and intercontinental ballistic missiles.

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(24) On the problem of uncertainty in strategic planning and the arms race, see A.W. Marshall and H.W. Meckling, Predictability of the Cost, Time and Success of Development. Santa Monica, Cal.: Rand Corporation, P-1821, December 1959; Charles J. Hitch and Roland N. McKean, The Economics of Defence in the Nuclear Age. Cambridge, Mass.: Harvard University Press, 1960, pp.188-200; A.W. Marshall, Problem of Estimating Military Power. Santa Monica, Cal.: Rand Corporation, P-3417, August 1966; Nils Orvik, 'The Threat: Problems of Analysis', International Journal, vol.XXVI, No.4, Canadian Institute for International Affairs, 1971; Colin S. Gray, '"Gap" Prediction and America's Defence: Arms Race Behaviour in the Eisenhower Years', Orbis, vol.XVI, No.1, Spring 1972, pp.257-274; Ted Greenwood, Reconnaissance, Surveillance and Arms Control, Adelphi Paper No.88, London: Institute for Strategic Studies, 1972; Young, op. cit., pp.169-172; Moulton, From Superiority to Parity, op. cit., pp.14-15, 280-281; 'Technological Change and the Strategic Arms Race' in William R. Kintner and Robert L. Pfaltzgraff, Jr., eds., SALT. University of Pittsburgh Press, 1973, pp.118-122; Gray, 'Predicting Arms Race Behaviour', op. cit.

Washington also failed to anticipate a major deployment of missiles of medium and intermediate ranges under Mr. Khrushchev's leadership. During the late 1960s, American projections of Soviet strategic force levels for the final years of the decade were also shown to be significantly inaccurate, as was the projected date of the USSR's first multiple warhead tests.(25)

American errors have also included a number of over-estimates of Russian capabilities including predictions of massive Soviet bomber strength in the mid-1950s and spiralling ICBM force levels later in the decade.(26)

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(25) Gilpin, American Scientists and Nuclear Weapons Policy, op. cit., pp.75, 127; Gray, 'Predicting Arms Race Behaviour', op. cit., pp.382, 384.

(26) On western reports of Soviet air power in the mid-1950s and the 'bomber gap', see 'Red Air Power', An Cosantoir, vol.14, No.3, March 1954, pp.124-128; 'Russia's Long-range Bombers: Truth or Fiction?', Interavia, No.4, 1954, p.236; 'Long-range Bombing Force', Interavia, vol.9, 1954, pp.520-521; 'Strategic Bombers in East and West', Interavia, vol.9, No.8, 1954, p.519; 'Red Air Force: Our Equal?', Air Training, vol.4, February 1955, pp.8-11; Nathan F. Twining, 'General Twining Reports on Red Airpower - and Ours', Air Force, vol.38, No.5, May 1955, p.33; John W.R. Taylor, 'How Good is the Soviet Air Force?', Air Power, vol.3, No.3, April 1956, pp.171-181; Curtis Le May, 'Soviet Air Power may be Capable of Devastating US by 1966', American Aviation, vol.20, June 4, 1956, p.14; 'Second Best Air Force is Now Official', Air Force, vol.39, June 1956, pp.34-35; 'Soviet Drive for Air Power', Aeronautics, vol.34, August 1956, pp.52-53; Nathan F. Twining, 'Report from Moscow', Air Force, vol.39, August 1956, pp.60-65; Richard E. Stockwell, Soviet Air Power. New York: Pageant Press, 1956; Bottome, op. cit., pp.35-38; Moulton, From Superiority to Parity, op. cit. pp.17-18, 261; Quester, Nuclear Diplomacy, op. cit., pp.126-139; Gray, 'Predicting Arms Race Behaviour', op. cit., pp.381, 384; Gray, 'The Racing "Syndrome" and the Strategic Balance', op. cit., p.8.

On the 'missile gap', see Charles Murphy, 'The

Commenting in 1967 on American assessments of Soviet strength before the development of reconnaissance satellites, and the US 'reactions' which they stimulated, President Johnson observed:

> We were doing things we didn't need to do. We were building things we didn't need to build. We were harbouring fears we didn't need to harbour. (27)

Uncertainty as to the Soviet capabilities and intentions, as well as some degree of doubt as to the performance of American weapons, has clearly led the United States to 'worst-case' planning and preparations to meet a 'greater-than-expected-threat' on many occasions. By the late 1960s, conservative planning assumptions had brought US nuclear forces to levels far in excess of those demanded by the American theory of requirements, the doctrine of 'assured destruction'.(28)

White House since Sputnik', Fortune, lvii, January 1958, pp.98-101; 'Defence: The Missile Gap Flap', Time, February 1961, p.12; 'The Truth about the Missile Gap', US News and World Report, February 27, 1961, p.41; Stuart Symington, 'Where the Missile Gap Went', The Reporter, XXVI, February 15, 1962, pp.21-23; Edgar M. Bottome, The Missile Gap: A Study of the Formulation of Military and Public Policy. Cranbury, N.J.: Fairleigh Dickinson University Press, 1970; York, op. cit., pp.125-146; Bottome, The Balance of Terror, op. cit., pp.39-73; Moulton, From Superiority to Parity, op. cit., pp.60-68; Quester, Nuclear Diplomacy, op. cit., pp.145-197; Gray, 'Predicting Arms Race Behaviour', op. cit., p.382; Gray, 'The Racing "Syndrome" and the Strategic Balance', op. cit., p.8.

(27) Newhouse, op. cit., p.71.

(28) On the over insurance for MAD, see Enthoven and Smith, op. cit., pp.178-179; Newhouse, op. cit., pp.71-77.

Domestic Pressures and Constraints

In addition to the effects of semantics, and strategic doctrine, as well as the always considerable margin of uncertainty involved in defence planning, any satisfyingly symmetrical analysis of the 'arms race' as a simple, externally motivated two-party competition must withstand the evidence of a host of domestic or non-responsive influences, pressures and constraints which have affected the policy of each competitor.

Geography

Any nation's assessment of its strategic requirements must be influenced by its geographical position. The absence of any major military threat on the North American continent and the protection of two oceans permitted the United States to avoid the maintenance of large armed forces throughout most of its history. America's geographical location still allows planners to dismiss the danger of local attack. In contrast, the Soviet Union, confronted by several major European powers on her western border, as well as China in the east, must prepare for local conflicts along frontiers stretching over thousands of miles. The danger of local conflict has long encouraged the support of large Russian ground armies and has

recently required preparations to meet air-nuclear attacks from Europe and Asia.

In such circumstances, Soviet strategic doctrine and force structure must attend to problems outside the context of the 'superpower' relationship, whether or not American planners are always fully aware of this Soviet requirement.(29) An illustration of the constraining effects of geography and the danger of local attack on the effective operation of action-reaction was provided by the massive Soviet deployment of medium and intermediate range missiles which began during the later half of the 1950s, a period in which the United States was attempting to 'react' to an anticipated build-up of Soviet ICBMs which was not to take place for several years.(30)

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(29) F.O. Miksche, 'Geography and Strategy' in B.H. Liddell Hart, ed., The Soviet Army. London: Weidenfeld and Nicholson, 1956, pp.242-253; A.D. Nicholl, 'Geography and Strategy' in G.M. Saunders, ed., The Soviet Navy. London: Weidenfeld and Nicholson, 1958, pp.243-259; Jan Kowalewski, 'The Geopolitical Aspects of Soviet Imperialism' in Ibid.; Garthoff, Soviet Military Policy. New York: F.A. Praeger, 1966, pp.98-100.

(30) On the failure of American analysts to anticipate the Soviet deployment of missiles of less than intercontinental range, see Wolfe, Soviet Power and Europe, op. cit., pp.178-184; York, op. cit., p.95; Lee, 'The "Politico-Military-Industrial Complex" of the USSR', op. cit., pp.76-78; Gray, 'Predicting Arms Race Behaviour', op. cit., p.384.

Historical Experience

Both American and Russian strategic planners have been influenced by historical experience. The United States - isolated both politically and geographically for most of its history - did not readily accept the permanent maintenance of large forces-in-being for deterrent, war-waging or political purposes.(31) The USSR, on the other hand, after long involvement in the political and military conflicts of Europe and Asia, was perhaps better prepared to grasp the necessity for large forces-in-being and the political significance of military power. Russian history also brought the USSR to the postwar period with deeply ingrained ground army traditions which firmly established ground forces as the central feature of strategic planning. These traditions clearly played some part in retarding the Soviet development of a deterrence concept based upon nuclear weapons. Further, the long established position of the European theatre as the focus of Soviet concern and interest ill-prepared the USSR for the exclusive concentration on an intercontinental adversary which was required for the fully effective performance of action-reaction.(32)

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(31) Osgood, Limited War, op. cit., pp.28-44.

(32) On the Soviet Union's European concentration, see Dinerstein, War and the Soviet Union, op. cit., pp.XII-XIV; Wolfe, Soviet Power and Europe, op. cit., pp.40-42, 110-113, 152-156.

Domestic Politics

Domestic politics in both countries have also affected the development of strategic doctrine and deployments, repeatedly intruding into the 'action-reaction' process. The 'defence issue' is written large throughout the record of modern US presidential campaigns and the ordinary course of American political life. American Presidents have been attacked either for their alleged failure to provide 'enough' for the national defence or for the ruinously wasteful and pointless accumulation of excessive military power. Political attacks and electoral pressures upon the Executive launched from the nation as a whole, as well as the pressures and influences emanating from the US Congress in particular, have affected the character of strategic doctrine, contributed to the determination of overall levels of defence spending and deployments, advanced or retarded the cause of individual weapons programmes and generally complicated the task of any strategic planner attempting to react faithfully to Soviet

actions.[33]

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(33) On the role of domestic politics and the US Congress in the development of American defence policy, see Elias Huzar, The Purse and the Sword. Ithica, N.Y.: Cornell University Press, 1950; Harris Gordon, 'Wanted: More Politics in Defence', Harper's Magazine, CCXIII, September 1956, pp.50-55; Donald G. Gumz, 'The Bureau of the Budget and Defence Policy', United States Naval Institute Proceedings, vol.85, No.4, April 1959, pp.80-89; Samuel P. Huntington, 'Strategic Planning and the Political Process', Foreign Affairs, XXXVIII, January 1960, pp.285-299; Edward L. Katzenbach, 'Bubud's Defence Policy', The Reporter, June 30, 1960, pp.25-30; Richard E. Neustadt, Presidential Power: The Politics of Leadership. New York: Wiley, 1960; Warner R. Schilling, 'The H-Bomb Decision: How to Decide Without Actually Choosing', Political Science Quarterly, LXXVI, March 1961, pp.24-46; Bernard Gordon, 'The Military Budget: Congressional Phase', Journal of Politics, XXIII, No.3, August 1961, pp.689-710; Huntington, The Uncommon Defence, op. cit.; Raymond H. Dawson, 'Congressional Innovation and the Intervention in Defence Policy: Legislative Authorisation of Weapons Systems', American Political Science Review, LVI, No.1, March 1962, pp.42-57; Schilling, Hammond and Snyder, eds., Strategy, Politics and Defence Budgets, op. cit.; Edward L. Kolodziej, 'Congressional Responsibility for the Common Defence, the Money Problem', The Western Political Quarterly, vol.XVI, No.1, March 1963, pp.149-160; Aaron Wildavsky, The Politics of the Budgetary Process. Boston: Little Brown, 1964; Kolodziej, The Uncommon Defence, op. cit.; Demetrios Caraley, The Politics of Military Unification: A Study of Conflict and the Policy Process. New York: Columbia University Press, 1966; Michael H. Armacost, The Politics of Weapons Innovation. New York: Columbia University Press, 1969.

While it is more difficult to examine the role of domestic politics upon Soviet defence policy, there have been clear signs of its influence during the past thirty years. For example, the cries of strategic alarm sounded by Party Chairman Khrushchev in the post-Stalin leadership struggle were largely inspired by the needs of Khrushchev's campaign against Premier Malenkov. After the retirement of Malenkov, the views of Mr. Khrushchev on strategic issues continued to undergo adjustment in apparent sympathy with his problems within the hierarchy of the Communist Party.(34)

Bureaucratic Pressures

Some measure of influence over strategic doctrine and deployments must also be assigned to government bureaucracies acting in accordance with their objective judgements as to national need and interest, as well as in conformity with narrower institutional or departmental interests. 'Bureaucracy' is admittedly an awkward and ill-fitting term - 'establishment' is a more fitting description - but the main point to emphasise is the internally generated pressure and momentum, which

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(34) Garthoff, Soviet Strategy in the Nuclear Age, op. cit.; Dinerstein, War and the Soviet Union, op. cit.; Wolfe, Soviet Strategy at the Crossroads, op. cit.; Horelick and Rush, Strategic Power and Soviet Foreign Policy, op. cit.; Kolkowicz, The Soviet Army and the Communist Party, op. cit.; Wolfe, Soviet Power and Europe, op. cit.

certainly undermines the simplistic notion of 'action-reaction'. Indeed, there is an autonomy of activity here in which inter-service and inter-departmental (even inter-personal) arguments and dissensions have demonstrably played a significant role in both the Soviet Union and the United States.(35) The development of the American doctrine of 'assured destruction' was, in part, the consequence of Defence Secretary Robert McNamara's need for some measurement of strategic requirements with which to resist the demands of the Pentagon bureaucracy for continuous increases in US force levels. It was only with time that this highly utilitarian device emerged as one of the fundamental tenets of American doctrine.(36)

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(35) Works touching upon bureaucratic influences in the USA include Timothy W. Stanley, American Defence and National Security. Washington: Public Affairs Press, 1956; Charles J.V. Murphy, 'Defence: The Converging Decisions: How Much for which Weapons for which Services for which Wars', Fortune, LVIII, October 1958, pp.119-120; James Kurth, 'Corporate and Bureaucratic Imperatives in American Weapons Procurement', R. Head and E.J. Rekke, eds., American Defence Policy III. Baltimore, Md.: The Johns Hopkins Press; Morton H. Halperin, 'The Decision to Deploy the ABM: Bureaucratic and Domestic Politics in the Johnson Administration', World Politics, XXV, October 1972, pp.62-95; Graham T. Allison, 'Questions About the Arms Race and Implications for Strategic Arms Limitation: A Bureaucratic Perspective', Paper Prepared for the Sixth International Arms Control Symposium, November 1-4, 1973, Philadelphia.

In the Soviet case, see Wolfe, The Soviet Military Scene: Institutional and Defence Policy Consideration. Santa Monica, Cal.: Rand Corporation, RM-4913-PR, June 1966; Marshal, Problems of Estimating Military Power, op. cit.; Mathew P. Gallagher, Karl F. Spielmann, The Politics of Power: Soviet Decision-Making for Defence, Institute for Defence Analyses, P-774, October 1971.

(36) Ericksen, 'Soviet Military Power', op. cit., p.XI.

Economic Objectives and Constraints

Throughout the postwar period economic priorities and constraints have played a large part in determining the overall quality and emphasis of defence policy, encouraging a nuclear emphasis or a conventional bias, assigning an essentially 'war-waging' or 'war-avoidance' mission, as well as strongly influencing the quantity or level of forces which each competitor has chosen to deploy in support of its strategic objectives. The deep commitment of President Eisenhower to budgetary stability during the 1950s played as great a part in shaping US strategy as any other single factor, turning the Eisenhower Administration to nuclear weapons as the source of both economic and military security. The later abandonment of strategic superiority for a policy of 'sufficiency' was publicly justified by what was said to be the unacceptable cost of indefinitely maintaining American superiority.(37)

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(37) On the economic factor in the development of American defence policy, see Jules Menken, The Economics of Defence. London: Ampersand, 1955; James Tobin, 'Defence, Dollars and Doctrines', Yale Review, XLVII, Spring 1958, pp.321-334; Murphy, 'Defence: The Converging Decisions: How Much for which Weapons for which Services for which Wars?', op. cit.; Hitch and McKean, Economics and Defence in the Nuclear Age, op. cit.; Henry Rowen, National Security and the American Economy in the 1960s, Study Paper No.18, Study of Employment, Growth and Price Levels, prepared for the Joint Economic Committee, 86th Congress, 2nd session, January 30, 1960; Huntington, The Common Defence, op. cit.; Merton J. Peck and Frederic M. Scherer, The Weapons Innovation Process: An Economic Analysis. Cambridge, Mass.: Harvard University Press, 1962; Alain Enthoven, 'Defence and Disarmament: Economic Analysis in the Department of Defence', American Economic Review, LIII, May 1963, pp.413-423; Frederic Scherer, The Weapons Acquisition Process: Economic Incentives. Cambridge, Mass.: Harvard University Press, 1964; Wildavsky, The Politics of the Budgetary Process, op. cit.; Kolodziej, The Uncommon Defence, op. cit.

Similarly, Mr. Khrushchev - committed to an expansion of the light industrial sector of the Soviet economy - was, in part, moved to an emphasis on nuclear power and a 'minimum deterrence' philosophy by the prospect of relatively inexpensive nuclear solutions to the USSR's security problems. As the Eisenhower Administration declared that America would be unable to affort more than 'sufficiency' in the future, Khrushchev was prevented from attempting to acquire the superior capabilities already asserted in Soviet declaratory doctrine by factors which included the economic constraints imposed upon Soviet policy. In place of superiority, the USSR settled for a kind of 'sufficiency', reconciling the nation's strategic and economic interests in a doctrine of 'minimum' nuclear deterrence.(38)

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(38) On the economic factor in the USSR, see Nikolai Galay, 'Soviet Economic Re-organisation: The Military Significance', Bulletin, Institute for the Study of USSR, vol.4, June 1957, pp.21-29; O. Hoeffding, 'Strategy and Economics: A Soviet View', World Politics, vol.2, January 1959, pp.316-324; Nikolai Galay, 'The Burden of Soviet Military Expenditure', Bulletin, Institute for the Study of USSR, vol.8, March 1961, pp.29-34; Timothy Sosnovy, 'The Soviet Military Budget', Foreign Affairs, vol.42, No.3, April 1964, pp.488-494; Abrahan S. Becker, Soviet Military Outlay since 1955. Santa Monica, Cal.: Rand Corporation, 1964; S. Bartenev, 'Economic Foundations of Military Might', Soviet Military Review, September 1966, pp.3-6; 'Economic Factors in Soviet Military Policy' in Bloomfield, Clemens and Griffiths, Khrushchev and the Arms Race, op. cit., pp.50-58; Garthoff, Soviet Military Policy, op. cit., pp.100-106; John P. Hardt, Economic Insights on Current Soviet Policy and Strategy. Research Analysis Corporation, Report RAC-R-92, McLean Virginia, 1969; Stanley H. Cohn, 'The Economic Burden of Soviet Defence Outlays', in Economic Performance and the Military Burden in the Soviet Union, Joint Economic Committee, US Congress, September 1970; Herbert Block, 'Value and Burden of Soviet Defence' in Soviet Economic Prospects for the Seventies, Joint Economic Committee, US Congress, 1973.

Arms Industry Lobbies

The vigorous efforts of American arms industries to promote the sale of weapons systems have long been noted in the United States. Their forceful and well financed campaigns in pursuit of arms contracts and Congressional approval of weapons programmes, as well as their close relations with the armed services, prompted President Eisenhower's often quoted warning on the dangers of undue military-industrial influence over the nation's affairs. The precise role of the arms industries in the development of American policy at any given time is a matter for painstaking analysis. However, they have undoubtedly played a substantial role in shaping US force structure since the Second World War, exerting the influence motivated by commercial interest rather than any concern for sensitive reaction to Soviet policy.(39) Although the

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(39) On the American arms industries and their influence, see C. Wright Mills, The Causes of World War III. New York: Simon and Schuster, 1958; and by the same author, The Power Elite. New York: Oxford University Press, 1959; Donald G. Brennan, Arms Control, Disarmament and National Security. New York, 1961; Fred J. Cook, The Warfare State. New York: Macmillan, 1962; Irving L. Horowitz, The War Game: Studies of the New Civilian Militarists. New York: Ballantine Books, 1962; Victor Perlo, Militarism and Industry: Arms Profiteering in the Missile Age. New York: International Publisher, 1963; Herman S. Wolk, 'Vietnam and the Warfare State Conplex', Air Force Magazine, April 1967, pp.39-43; Richard J. Barnet, The Economy of Death. New York: Atheneum, 1969; Ralph E. Lapp, The Weapons Culture. Baltimore, Md.: Penguin, 1969; R.F. Kaufman, The War Profiteers. Indianapolis, Ind.: Bobbs-Merrill, 1970; Lapp, Arms Beyond, op. cit.; Sidney Lens, The Military-Industrial Complex. Philadelphia: Pilgrim Press and

influence of the state arms industries in the Soviet Union is not easily examined, they too have contributed to the development of policy.(40)

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the National Catholic Reporter, 1970; Seymor Melman, Pentagon Capitalism: The Political Economy of War. New York: 1970; Stephen A. Cimbala, 'New Myths and Old Realities: Defence and its Critics', World Politics, XXIV, October 1971, pp.127-157; Sanford Gbttlieb, 'A State Within a State: What is the Military-Industrial Complex?', Dissent, October 1971, pp.492-502; Arnold Kantner and Stuart J. Thorson, 'The Logic of American Weapons Procurement: Problems in the Construction and Evaluation of Policy Theories', Paper delivered at the 1972 Midwest Regional Meeting of the International Studies Association and the Peace Research Society, Toronto, Ontario, May 11-13, 1972; 'The Military Industrial Complex', Part II in Stephen E. Ambrose and James Abden Barber, eds., The Military and American Society. New York: The Free Press, 1972, pp.43-120.

(40) Works touching upon the Soviet arms industries include Richard Armstrong, 'Military-Industrial Complex - Russian Style', Fortune, August 1, 1969; John P. Hardt, Economic Insights on Current Soviet Policy and Strategy, Research Analysis Corporation, Strategic Studies Department Report, RAC-R-92, 1969; William T. Lee, 'Soviet Military Industrial Complex', Armed Services Management, May and April 1970; Andrew Sheren, 'Structure and Organisation of the Defence-Related Industries' in Economic Performance and the Military Burden in the Soviet Union, Joint Committee, Congress of the US, 1970; Konstantin K. Krylev, 'Soviet Military-Industrial Complex', Military Review, vol.51, No.11, November 1971; Raymond Hutchings, Soviet Economic Development. Oxford: Basil Blackwell, 1971; T.W. Wolfe, Soviet Interests in SALT: Political, Economic, Bureaucratic and Strategic Contributions and Impediments to Arms Control. Santa Monica, Cal.: Rand Corporation, P-4702, 1971; Aspaturian, 'The Soviet Military-Industrial Complex - Does it Exist?', op. cit.; Lee, 'The "Politico-Military-Industrial Complex" of the USSR', op. cit.

Armed Service Pressures

Pressure from the armed services on behalf of increased defence expenditures, the deployment of new weapons systems and the preservation or expansion of their respective strategic roles, are also involved in the policy-making process in both the USA and the USSR and frequently results in policy decisions which bear little relation to the actions of any external competitor. Consistent US Air Force pressure has helped to sustain an important role for long-range bombers in American strategy, while Army influence has long been exerted in support of the continuing need for large general purpose forces. During such controversies as those over the B-36 bomber and the Thor and Jupiter missiles, the conflicting views of the armed services were a part of the interservice competition for strategic nuclear missions, a contest inspired by the awareness that only a nuclear role guaranteed a first ranking strategic mission and ready access

to the Federal Treasury.[41]

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(41) On the American armed forces in the policy-making process, see Jerome G. Kerwin, ed., Civil-Military Relationships in American Life. Chicago: University of Chicago Press, 1948; Burton M. Sapin and Richard C. Snyder, The Role of the Military in American Foreign Policy. Garden City, N.Y.: Doubleday, 1954; William T.R. Fox, 'Civilians, Soldiers and American Military Policy', World Politics, VI, April 1955, pp.402-418; Michael Howard, ed., Soldiers and Government. London: Eyre and Spottiswoode, 1957; Samuel P. Huntington, The Soldier and the State. Cambridge, Mass.: Belknap Press, 1957; Walter Millis, Arms and the State. New York: The Twentieth Century Fund, 1958; Michael Howard, 'Civil-Military Relations in Great Britain and the United States, 1945-1958', Political Science, March 1960; Morris Janowitz, The Professional and the State. Glencoe, Ill.: Free Press, 1960; Samual P. Huntington, 'The Military Lobby: Its Impact on Congress, Nation', Congressional Quarterly Review, March 24, 1961; Donald G. Brennan, Arms Control Disarmament and National Security. New York, 1961; Paul Y. Hammond, Organising for Defence. Princeton, N.J.: Princeton University Press, 1961; Samuel P. Huntington, 'Interservice Competition and the Political Roles of the Services' in Harry L. Coles, ed., Total War and Cold War. Columbus, Ohio: Ohio University Press, 1962; Samuel P. Huntington, ed., Changing Patterns of Military Politics. New York: The Free Press of Glencoe, 1962; Harold Stein, ed., American Civil-Military Decisions. Birmingham, Ala.: University of Alabama Press, 1963; Harry Howe Ransom, Can American Democracy Survive Cold War? New York: Doubleday, 1964; John W. Swomley, Jr., The Military Establishment. Boston: Beacon Press, 1964; Armacost, op. cit.; John K. Galbraith, How to Control the Military. Garden City, N.Y.: Doubleday, 1969; James A. Donavan, Militarism USA. New York: Scribner's, 1970; Martin Oppenheimer, ed., The American Military. Transaction Books, 1971; Adam Yarmolinsky, The Military Establishment: Its Impacts on American Society. New York: Harper and Row, 1971; Ambrose and Barber, op. cit.

The opposition of the Soviet armed forces to the growing emphasis on missile-nuclear systems in Soviet doctrine under Premier Khrushchev contributed to a modification in the Premier's policy. Vocal expressions of armed service dissatisfaction with Khrushchev's defence policies after the succession of the collective leadership also influenced the direction of planning during the latter half of the 1960s, and apparently reached a level of intensity which required public reassertions of the Communist Party's traditional place of leadership in policy making.(42)

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(42) On the role of the Soviet armed forces in the policy-making process, see Nikolai Galay, 'Domestic Policy and the Soviet Army' in USSR Today and Tomorrow, Proceedings of the Conference of the Institute for the Study of the History and Culture of the USSR, Munich, August 15-17, 1953, pp.49-56; 'The Beria Affair of the Army', Bulletin, Institute for the Study of USSR, March 1954, pp.35-36; 'The Army and the Supreme Soviet', Bulletin, Institute for the Study of the USSR, vol.1, April 1954, pp.23-26; Andre Pierre, 'The Army and the Party in the Soviet Union', Military Review, vol.35, September 1955, pp.92-97; William R. Kintner, 'The Military as an Element of Soviet State Power', US Naval Institute Proceedings, vol.81, July 1955, pp.771-783; Nikolai Galay, The Role of the Military in Post-Stalin Soviet Politics. Santa Monica, Cal.: Rand Corporation, 1956; and by the same author, The Role of the Military in Recent Soviet Politics. Santa Monica, Cal.: Rand Corporation, 1956; R.L. Garthoff, 'The Role of the Military in Recent Soviet Politics', Russian Review, vol.14, April 1957, pp.15-25; Nikolai Galay, 'The Role of the Soviet Army in the Crisis of the Collective Leadership', Bulletin, Institute for the Study of USSR, August 1957, pp.13-20; Harry Schwartz, 'World-wide Question: Zhukov's Role', New York Times Magazine, October 6, 1957, pp.16-20; Louis Fischer, 'The Fatal Mistake of Marshal Zhukov',

New Leader, February 10, 1958, pp.3-7; John Erickson, 'Zhukov, Khrushchev and the Red Army', Marine Corps Gazette, vol.42, November 1958, pp.48-51; Leon Geure, The Political Position of the Soviet Army since Stalin. Santa Monica, Cal.: Rand Corporation, 1958; 'Russia's Zhukov, the General who Saved Khrushchev's Job', US News and World Report, July 19, 1959, pp.42-44; Nikolai Galay, 'The Influence of Military Factors on Soviet Foreign Policy', Bulletin, Institute for the Study of USSR, September 1959, pp.34-37; Hans-Jurgen Eitner, 'Soviet Marshals and The Khrushchev', Military Review, vol.40, April 1960, pp.101-108; Nikolai Galay, 'The Soviet Army and Domestic Policy', Bulletin, Institute for the Study of USSR, October 1960, pp.3-15; R.L. Garthoff, 'The Marshals and the Party: Soviet Civil-Military Relations in the Postwar Period' in Harry L. Coles, ed., Total War and Cold War. Columbus, Ohio: Ohio State University Press, 1962, pp.241-266; John Erickson, 'The "Military Factor" in Soviet Policy', International Affairs, vol.39, April 1963, pp.214-226; Roman Kolkowicz, Conflicts in Soviet Party-Military Relations: 1962-1963. Santa Monica, Cal.: Rand Corporation, 1963; T.W. Wolfe, Role of the Military in Decision Making and Soviet Politics. Santa Monica, Cal.: Rand Corporation, 1963; V.P. Artemiev, 'The Communist Party and the Soviet Armed Forces', Military Review, vol.44, February 1964, pp.29-37; Ernst Kux, 'The Red Army and Khrushchev', Swiss Review of World Affairs, vol.14, July 1964, pp.11-13; T.W. Wolfe, Signs of Stress in Soviet Political-Military Relations. Santa Monica, Cal.: Rand Corporation, 1964; and by the same author, Some Recent Signs of Reaction Against the Prevailing Soviet Doctrinal Emphasis on Missiles. Santa Monica, Cal.: Rand Corporation, 1964; Soviet Strategy at the Crossroads, op. cit.; Kenneth R. Whiting, 'The Debate between Khrushchev and His Marshals', Air University Quarterly Review, vol.16, March-April, 1965, pp.68-79; R.L. Gartheff, 'Khrushchev and the Military' in Alexander Dallin and Alan F. Westin, Politics in the Soviet Union: 7 Cases. New York: Harcourt Brace, 1966; Kolkowicz, Soviet Party Military Relations: Contained Conflict. Santa Monica, Cal.: Rand Corporation, 1966; Kolkowicz, The Soviet Army and the Communist Party, op. cit.; Garthoff, 'Military Power in Soviet Policy' in Erickson, ed., The Military-Technical Revolution, op. cit.; Kolkowicz, The Dilemma of Superpower: Soviet Policy and Strategy in Transition, op. cit.; Gehlen, op. cit.; Wolfe, 'Are the Generals Taking Over?', Problems of Communism, July-October 1969, pp.106-110; V.V. Aspaturian, Process and Power in Soviet Foreign Policy. Boston: Little Brown, 1971; Kolkowicz, 'Strategic Parity and Beyond', op. cit.; Malcolm Mackintosh, 'The Soviet Military: Influence on Foreign Policy', Problems of Communism, September-October 1973.

Impact of Technology

Strategic doctrine and deployments have also been greatly effected by the almost self-generating momentum of technological development. New Weapons and refinements of existing systems have been deployed for which there was no critical need within the context of action-reaction either at the time of their original conception or subsequent birth, but which were nevertheless technologically feasible and were, therefore, eventually accommodated within strategic doctrine. The effect of technology has been increased by military 'spin-off' from civilian research projects which has resulted in the almost unwitting development of new capabilities. The multiple warhead is perhaps an example of a refinement which was the nearly inevitable and to some degree unintentional consequence of both military and non-military research.(43)

Further, any judgement as to the motives behind a major weapons deployment is complicated by the considerable length of the weapons design, testing production and deployment cycle. With the entire gestation period extending over several years, design and deployment decisions are frequently made under very

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(43) The Origins of MIRV, SIPRI Research Report No.9, August 1973; Herbert York, 'Multiple Warhead Missiles', Scientific American, vol.229, No.5, November 1973, pp.18-27; Newhouse, op. cit., pp.28-31.

different international and domestic circumstances. The progress of any given system through the full series of developmental stages is therefore affected by a continuously changing mix of influences and pressures. In such circumstances it is clearly injudicious to assume at the time of a major deployment by either competitor that the new system can be entirely - or even largely - credited to the immediately contemporary actions and policies of the other.(44)

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(44) On the role of technology in the Soviet-American strategic competition, see United States Foreign Policy: Developments in Military Technology and their Impact on US Strategy and Foreign Policy. Washington Centre of Foreign Policy Research, Prepared for the Committee on Foreign Relations, US Senate 86th Congress, 2nd session, 1959; Sir Charles P. Snow, Science and Government. Cambridge, Mass.: Harvard University Press, 1960; Hedley Bull, 'The Problem of Continuous Innovation' in The Control of the Arms Race. London: Institute for Strategic Studies, 1961, pp.195-201; Bernard and Fawn Brodie, From Crossbow to H-Bomb. New York: Dell, 1962; Klaus Knorr and Oskar Morgenstern, Science and Defence: Some Critical Thoughts on Military Research, Policy Memorandum No.32, Princeton, Centre of International Studies, 1965; David W. Tarr, 'Military Technology and the Policy Process', The Western Political Quarterly, XVII, March 1965, pp.135-148; Ericksen, ed., The Military-Technical Revolution, op. cit.; Sir Solly Zuckerman, Scientists and War. London: Hamish Hamilton, 1966; Harold Brown, 'The Military Planner's Challenge: Reconciling Technology with Policy', Air Force Magazine, March 1967, pp.59-72; Albert Wohlstetter, The Implications of Military

Technology in the 1970s, Adelphi No.46, London: International Institute for Strategic Studies, March 1968; Herbert York, 'Military-Technology and National Security', Scientific American, vol.221, No.2, August 1969, pp.17-29; York, Race to Oblivion, op. cit.; B.T. Feld, T. Greenwood, G.W. Rathjens and S. Weinberg, eds., Impact of New Technologies on the Arms Race. Cambridge, Mass.: The MIT Press, 1971; Trever Cliffe, Military Technology and the European Balance, Adelphi Paper No.89, London: Institute for Strategic Studies, 1972; George S. Brown, 'Technology: The Mould for Future Strategy' in US Strategic Review, Spring 1973; 'Technological Change and the Strategic Arms Race', in Kintner and Pfaltzgraff, SALT, op. cit., pp.107-124; G.I. Pokrovskii, Science and Technology in Contemporary War. New York: F.A. Praeger; Roman Kolkowicz, The Impact of Technology on the Soviet Military: A Challenge to Transitional Military Professionalism. Santa Monica, Cal.: Rand Corporation, RM-4198-PR, August 1964; Alexander G. Korol, Soviet Research and Development. Cambridge, Mass.: The MIT Press, 1964; Benjanim S. Lambeth, The Argument for Superiority: A New Voice in the Soviet Strategic Debate. Institute for Defence Analysis, M-419 R, January 1967; The Soviet Military Technological Challenge. Washington: The Centre for Strategic Studies, Special Report, series No.6, September 1967; Robert Adamson, 'Mobilising Soviet Science', Scientific Research, vol.3, No.2, January 22, 1968, pp.25-34; Berry and Davis Aman, 'Science and Industry in the USSR' in Science Policy in the USSR. Paris: OECD, 1969; Michael Beretsky, 'The Technological Base of Soviet Military Power' in Economic Performance and the Military Burden in the Soviet Union, op. cit.; Kolkowicz, 'Strategic Elites and Politics of Super Power', op. cit.

Third Party Conflicts and Alliance Commitments

The status of the 'action-reaction' process as the author of Soviet and American doctrines and the architect of their force structures is also compromised by each competitor's preparations for conflicts outside the super-power context. As already noted, Soviet strategic planning must allow for the possibility of local conflicts, taking particular care to meet the danger of a large-scale Chinese assault. American strategic planning has also been concerned with the possibility of a Chinese attack, as well as with the security of a long list of alliance partners in Asia, Latin America and other regions outside the traditional areas of direct Soviet-American confrontation.(45)

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(45) On American concern for conflicts outside the super-power context, see Henry A. Kissinger, 'Military Policy and Defence of the "Gray Areas"', Foreign Affairs, XXXIII, No.3, April 1955, pp.416-428; John C. Campbell, Defence of the Middle East: Problems of American Policy. New York: Harper and Bros., 1958; A. Doak Barnet, Communist China and Asia, Challenge to American Policy. New York: Harper and Bros., 1960; Princeton Nathan Lyman, Alliances and the Defence of Southeast Asia: A Study of American Policy in Southeast Asia, 1950-1960, unpublished doctrinal dissertation, Harvard University, May 1961; Henry A. Kissinger, The Necessity for Choice: Prospects of American Foreign Policy. New York: Harper and Bros., 1961; Ames A. Jordan, Foreign Aid and the Defence of Southeast Asia. New York: Praeger, 1962; J.I. Coffey, 'The Chinese

and Ballistic Missile Defence', Bulletin of the Atomic Scientists, vol.10, No.2, December 1965; Alastair Buchan, ed., China and the Peace of Asia. New York: F.A. Praeger, 1965; D.E. Kennedy, The Security of Southern Asia. New York: F.A. Praeger, 1965; Impact of Chinese Communist Nuclear Progress on US National Security. Report of Joint Committee of Atomic Energy, July 1967; Alice L. Hsieh, Communist China's Military Policies, Doctrine and Strategy. Santa Monica, Cal.: Rand Corporation, 1968; Harry G. Gelber, 'China and SALT', Survival, XII, No.4, April 1970; Alice L. Hsieh, China's Nuclear Strategy and a US Anti-Chinese ABM, statement before the Sub-committee on Arms Control, International Law and Organisation of the Senate Foreign Relations Committee, April 9, 1970.

On the Soviet Union and China, see Donald Zegoria, The Sino-Soviet Conflict. Princeton, N.J.: Princeton University Press, 1962; Malcolm Mackintosh, 'The Military Aspects of the Sino-Soviet Dispute', Bulletin of the Atomic Scientists, vol.21, October 1965, pp.14-18; R.L. Garthoff, ed., Sino-Soviet Military Relations. New York: F.A. Praeger, 1966; Malcolm Mackintosh, 'Implications of Sino-Soviet Dispute', in Erickson, ed., The Military-Technical Revolution, op. cit., pp.258-270; Walter C. Clemens, Jr., The Arms Race and Sino-Soviet Relations. Stanford, Cal.: The Hoover Institution Publications, 1968.

Academic Analysts

Some degree of influence over the development of American strategy and the evolution of strategic ideas in the United States should, perhaps, be credited to academic analysts at work in universities and private research organisations. Throughout the postwar period, American and Soviet defence policies have been subjected to continuous analysis and criticism from these quarters. Some of the resulting conclusions and recommendations have rested upon detailed examination of Soviet capabilities, while others have been based upon rarefied theorising about the nature of nuclear deterrence or the conduct of a future conflict.(46)

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(46) John McDonald, 'The War of Wits', Fortune, vol.43, March 1951, pp.99 ff; Morris Janowitz, 'Military Elites and the Study of War', Journal of Conflict Resolution, vol.1, March 1957, pp.37-43; Joseph Kraft, 'Rand: Arsenal for Ideas', Harper's Magazine, CCXXI, July 1960, pp.69-74; Edward L. Katzenbach, 'Ideas: A New Defence Industry', The Reporter, March 2, 1961, pp.17-21; Gene M. Lyons, 'The New Civil-Military Relations', American Political Science Review, March 1961; Gilpin, op. cit.; Arthur Herzog, 'Report on a Think Factory', The New York Times Magazine, No.10, 1963, pp.30 ff; General Thomas D. White, 'Strategy and the Defence Intellectuals', Saturday Evening Post, May 4, 1964, pp.10-12; Robert Gilpin and Christopher Wright, eds., Scientists and National Policy-Making. New York: Columbia University Press, 1964; Bernard Brodie, 'The Scientific Strategists' in Ibid.; Wesley W. Posvar, 'The Impact of Strategy Expertise on National Security Policy' in Public Policy: Yearbook of the Harvard Graduate School of Public Administration. Cambridge, Mass.: Harvard University Press, 1964; Albert Wohlstetter, 'Strategy and the Natural Scientists' in Gilpin and Wright, op. cit. pp.174-239; Gene M. Lyons and Louis Morton, Schools for Strategy. New York: F.A. Praeger, 1965; Bruce L.R. Smith, The Rand Corporation. Cambridge, Mass.: Harvard University Press, 1966; Hedley Bull, 'Strategic Studies and its Critics', World Politics, July 1968; Kolkowicz, 'Strategic Elites and Politics of Superpower', op. cit.

Marxist Ideology

Finally, the principles of Marxism-Leninism must be noted as an influence on Soviet perceptions and policy. In the final years of the Stalin period, the 'unique' insight afforded by Marxist analysis allegedly favoured the USSR with the only truly scientific appreciation of warfare, and provided a guarantee of victory in any future conflict. Marxist ideology may have, in fact, contributed to the Soviet perception of the United States as an adversary and may also have encouraged the United States to regard the USSR as intrinsically hostile. After the death of Stalin, the dictum on the inevitability of war between capitalist and communist states was clearly one of the obstacles which had to be overcome before a strategy of deterrence could be publicly adopted.(47)

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(47) R.L. Garthoff, 'Ideological Conceptions in Soviet Foreign Policy', Problems of Communism, vol.2, No.5, 1953, pp.1-8; Nikolai Galay, 'Influence of the Bolshevik Revolution and the Social Doctrine of the USSR on Modern Warfare', Bulletin, Institute for the Study of USSR, March 1954, pp.20-28; and by the same author, 'Revisionism, Dogmatism and the Soviet Armed Forces', Bulletin, Institute for the Study of USSR, November 1958, pp.3-12; James D. Atkinson, 'The Impact of Soviet Theory on Warfare as a Continuation of Politics', Military Affairs, vol.24, No.1, Spring 1960, pp.1-6; N. Sushko, 'Marxism-Leninism on Warfare and the Army', Soviet Military Translation 272, Joint Publications Research Service 35777, vol.4, No.11, July 1965-June 1966; Quester, 'On the Identification of Real and Pretended Communist Doctrine', op. cit.; Ye. Nikitin, 'Lenin and Soviet Military Science', Soviet Military Review, No.4, Summer 1972; Benjamin S. Lambeth, 'The Sources of Soviet Military Doctrine', Conference on Comparative Defence Policy, Department of Political Science, USAF Academy, Colorado, 7-9 February 1973.

Competitive Processes : Direct Reactions

Far from confirming the central role of 'action-reaction' or any other single process as the driving force of the 'arms race', postwar history and the wealth of influences, pressures and constraints acting upon each competitor reveals several different processes by which policy has been developed and individual weapons decisions determined. Among these is the action-reaction process in all of its classical simplicity. The record of the Soviet-American strategic relationship includes examples of direct reactions by each competitor to the actions of the other, producing closely linked emulative or directly counterbalancing responses. Improvements in Soviet air defence during the 1950s - a period in which the United States was moving to a heavy reliance upon its air-nuclear strike capability - can be reasonably identified as a clear Soviet reaction to American actions.(48) The reversal of United States policy on ballistic missile defence in the late 1960s can also be fairly assessed as an American reaction to Soviet defensive and offensive deployments.(49) However, such instances of direct reaction are uncommon events in the history of the 'arms race' and have usually involved specific technological developments rather than broader strategic or doctrinal issues.

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(48) Lee, The Soviet Air Force, op. cit., pp.109-125; Wolfe, Soviet Powers and Europe, op. cit., pp.184-186.

(49) Young, op. cit., p.194, fn.51.

Delayed Reactions : Time-Lag Reconsidered

The history of the 'arms race' has also recorded examples of what might be termed 'delayed' reactions, instances in which a competitor has chosen to adopt a policy which may not have appeared to have been a direct reaction to the current policy of its adversary, but which may have been an emulative response by one side to an earlier strategic posture of the other, a posture which its originator may have already abandoned. The Stalinist 'freeze' on strategic thought and the resulting 'time lag' between Soviet and American doctrines may well have rendered Soviet doctrine especially prone to such 'delayed reactions'. The development of a Soviet nuclear strategy and the eventual emergence of 'deterrence' in the USSR after the death of Stalin might be broadly considered a Soviet emulation of, or 'delayed' reaction to, developments in US technology and doctrine. It is also arguable that the Soviet version of a 'New Look' - essentially 'massive retaliation' posture - in the late 1950s, marked an imitative response to the earlier Eisenhower policy in a time when American planners were having serious doubts about the efficiency of the 'New Look - Massive Retaliation' strategy. The later Soviet interest in a 'war-waging' capability and a kind of 'flexible response' might also be explained as a 'delayed' reaction to the prior American interest in these concepts, again at a time when the United States was departing from its 'war-waging' doctrine.

Reactions Shaped by Internal Factors

Many modifications in the strategy and force structure of each competitor have been achieved which, while fundamentally stimulated by the actions of the other, produced responses of a kind determined largely by internal or otherwise non-responsive factors. For example, the American perception of a major Soviet conventional threat prompted the Eisenhower Administration to modify the heavy strategic nuclear emphasis of the early 'New Look' doctrine. However, the stimulus for doctrinal revision provided by the USSR's ground strength, tied to her growing nuclear capability, did not move the United States to a build-up in its conventional forces on the Soviet model. As a consequence of several internal factors - chiefly the economic or budgetary principles of the Eisenhower Administration - the United States chose to 'respond' to the alleged Soviet advantage in conventional forces by placing greater stress on its growing arsenal of tactical nuclear weapons.(50)

In the Soviet case, the major strategic threat posed by the United States Navy stimulated a large scale expansion in the capabilities and operational sphere of the USSR's naval forces during the 1960s. However, for a number of reasons

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(50) Huntington, The Common Defence, op. cit., pp.105-106.

unrelated to the actions of the United States, the USSR did not chose to respond to the US seaborne challenge by producing a 'balanced' ocean-going Navy of the American type. The Soviet Union instead 'reacted' by producing a fleet which emphasised relatively light surface vessels and which continued to reflect a long-established bias in favour of subsurface forces.(51)

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(51) Wolfe, 'Soviet Naval Interaction with the United States and its Influence on Soviet Naval Developments', op. cit., pp.215-245.

Independent Initiatives

Beyond the generative powers of external stimuli, policies and weapons systems have also originated from internal sources and only later received additional impetus from the actions of a competitor. For example, the origins of American multiple warhead research can be traced to the requirements of the counterforce bias in US doctrine, as well as to the almost self-propelling advance of technology. However, at the time of their deployment in the 1960s, the Soviet acquisition of an ABM capability provided an important responsive justification for the multiple warhead programme.(52)

Finally, both the United States and the Soviet Union have adhered to doctrines or approved weapons initiatives which stemmed almost entirely from internal sources, with little or no responsibility attaching to any external influence for their development.* The breath-taking expansion of American nuclear forces during the early 1960s, largely represented an American 'reaction' to the requirements of its own newly elaborated doctrine. The state of Soviet doctrine in the first few years after the Second World War, rigidly 'frozen' in its wartime form, was essentially the product of domestic political factors. As long as Stalin remained in power, it was entirely impossible to suggest any modification or re-examination of the doctrine which established his personal reputation for strategic genius.(53)

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(52) The Origins of MIRV, op. cit., p.20.

(53) Dinerstein, War and the Soviet Union, op. cit., pp.5-7.

* In the absence of any newly perceived 'threat', strategic doctrine and deployments have been decisively shaped at various points by the domestic factors involved in policy-making, as well as by a desire to acquire greater diplomatic leverage and international prestige through increased military power.

Mixed Motives

While it is perhaps useful for purposes of discussion to identify each of the several processes by which individual policies and programmes have emerged and developed, it is very often impossible to label a major strategic development as solely the product of external or internal stimuli. The emergence of the 'Massive Assured Destruction' doctrine (MAD) in the United States was clearly encouraged by the extensive build-up in strategic armaments approved by Mr. Brezhnev. Nevertheless, the development of MAD was also prompted by the planning and domestic bargaining problems of the Secretary of Defence. The long-held American opposition to missile defence was supported by the conviction that the Soviet Union had grown too powerful for any defence to be effective. However, it was also prompted by the strong suspicion that the system under development simply would not work and, in any case, would prove unacceptably expensive.(54)

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(54) Jules Bergman, 'If Zeus Fails, Can Sprint Save Us?', New York Times, March 20, 1966, sect.IV, p.26; Benjamin Welles, 'Senate Panel Adds Anti-missile Funds', New York Times, April 22, 1966, p.1; Hanson W. Baldwin, 'On Missiles and Defences', New York Times, November 27, 1966, sect.IV, p.3.

Similarly, the Soviet move to 'minimum deterrence' under Mr. Khrushchev was apparently based upon the belief that even a small number of ICBMs targeted on US cities would suffice to deter America from aggression. Nevertheless, 'minimum deterrence' was also recommended by the technological and economic limitation imposed upon Soviet policy, making the achievement of genuine superiority or even parity - whether or not it was thought desirable - a very difficult undertaking.(55)

In short, the origins and development of a great many Soviet and American policies and programmes can be explained only in terms of a mixture of motives and influences, with the exact blend of factors involved in the adoption of any single doctrine or the deployment of any single weapons system very difficult, indeed often impossible to determine precisely.

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(55) Bloomfield, Clemens and Griffiths, op. cit., pp.106-115.

The Chemistry of Competition

A consideration of these factors which have obstructed the effective exercise of 'action-reaction', the numerous internal or otherwise non-responsive influences, pressures and constraints which have affected the formulation of defence policy and the various competitive processes through which strategic doctrines and weapons programmes have been developed, clearly establishes that any analysis of the post-war arms competition which describes the contest as a two-party 'race' powered by 'action-reaction', grossly over-simplifies the nature of strategic competition.

The Soviet Union and the United States were indeed placed in a broadly responsive relationship by an initial adversary perception following the Second World War, a perception which eventually prompted each country to maintain high levels of military power primarily, although not exclusively, intended to resist attack from the other. With the advance of modern weapons technology, policies designed merely to provide for resistance against attack evolved into more sophisticated strategies of 'nuclear deterrence'. This gradual evolution took place first in the United States to be followed by a similar development in the Soviet Union. The original Soviet American adversary perception and the 'time-lag' separating the emergence of deterrence in the two countries, may well have built reaction

into the foundations of the Soviet-American strategic relationship. Since the time of these fundamental developments, a number of specific strategic initiatives undertaken by each side have, in fact, stimulated reactions from the other. Today, 'action-reaction' continues to provide the military-political backdrop against which policy is made. However, with that much conceded to the role of 'action-reaction', no more can be granted.

For more than thirty years the original Soviet and American adversary or 'threat' perceptions, re-confirmed by the political and military events of the Cold War, have been filtered through a complex membrane of domestic or non-responsive influences, ultimately producing strategic doctrines and force structures of a strongly national character. Geography has set the strategic scene differently for each competitor. History has established deeply ingrained military traditions. Domestic political circumstances and the personal ambitions, judgements and fortunes of individual political leaders have advanced the development of some policies and programmes and retarded or terminated the progress of others. Economic policy has nourished those doctrines and deployments compatible with its objectives and constrained those which violated its principles or exceeded its means. Technology has encouraged or compelled various changes in force structure and strategy; and industrial lobbies, armed services and government

bureaucracies have each exerted influences which betrayed only a vague awareness of the actions of an external competitor.

The effectiveness of the 'action-reaction' process has been further decreased by several factors which have clouded each competitor's insight into the actions of the other, making any sensitively precise performance of 'action-reaction' difficult or impossible to execute. These obscuring factors have included differing grades or qualities of strategic doctrine (declaratory and operational) which have complicated efforts to determine the nature of a competitor's strategic intentions and objectives. The influence of each contestant's strategic doctrine upon its own actions has also seriously de-sensitised the 'action-reaction' process, producing policies and deployments unrelated to those of the adversary. Sharp disparities in the 'language of the competitive process' have also hindered the accurate perception of a competitor's actions and the very considerable margin of uncertainty on each side as to the future intentions and capabilities of the other, has often ensured the failure of even the most conscientious attempts at faithful reaction.

The assumption of basically responsive postures by both the United States and the Soviet Union soon after the Second World War and a number of instances of direct action and reaction since that time, have led to the characterisation of

the Soviet-American strategic relationship as an 'arms race' fuelled by the 'action-reaction' process. While the postwar arms competition can be termed a 'race' in the broadest sense, the overall development of each contestant's strategic doctrine and the overwhelming number of each competitor's individual policy decisions have not flowed directly from the actions of the other. They have, in fact, emerged from the interplay of a wide range of influences and pressures of which reaction to external stimuli was only one.

The great complexity of strategic competition clearly demands a more pertinent metaphor than that of a simple two-party 'arms race'. The development of the Soviet-American strategic relationship might better be described as the product of a highly complex 'chemical process' which had as its catalyst the early postwar perception of each competitor as an adversary by the other. Since the late 1940s, this catalyst of competition has initiated the development of strategic doctrines and force structures in two very dissimilar domestic environments, yielding two distinctly different strategic compounds, or policy precipates, which have consistently retained their respective elements and properties while continuing some degree of interaction.

PART I

THE EMERGENCE of DETERRENCE ;

THE FIRST ASYMMETRY

Chapter 1

The Early Post-War Period in The United States

Early Post-War Strategic Doctrine

In 1793 George Washington issued a warning to the American people saying:

> There is a rank due to the United States among nations which will be withheld, if not absolutely lost by the reputation of weakness - if we desire to avoid insult we must be ready to repel it; if we desire to secure peace it must be known that we are at all times ready for war. (1)

Despite Washington's warning, American history provides little evidence of popular support for remaining 'at all times ready for war' or for any strategy designed to provide security and political influence through the permanent maintenance of large armed forces.(2) Following a well established tradition, US armed forces were permitted to deteriorate dramatically after the close of the Second World War. Defence planning in the immediate post-war period remained centred around a mobilisation strategy chiefly concerned with the effective wartime exploitation of the nation's military and economic assets and the maintenance of high civilian morale. The United States was still said to enjoy important advantages in its command of a vast industrial mobilisation base and a large pool of reserve manpower which was to be supplied by a proposed programme for Universal Military Training.(3)

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(1) C. Joseph Bernardo and Eugene H. Bacon, American Military Policy. Harrisburg Penn.: Military Science Publishing Co., 1955, p.440.

(2) The traditional American difficulty in associating military power and political objectives is touched upon in Gordon B. Turner, 'Classic and Modern Strategic Concepts' in Gordon B. Turner and Richard D. Challener, eds., National Security in the Nuclear Age. New York: F.A. Praeger, 1960; and John Spanier, American Foreign Policy Since World War II. New York: F.A. Praeger, 1965.

(3) Samuel P. Huntington, The Common Defence. New York: Columbia University Press, 1961, p.47. Also on Universal Military Training, see John W. Swomley, Jn., The Military Establishment. Boston: Beacon Press, 1964.

The Mobilisation Concept

Army officers in particular often represented traditional strategic views in the early post-war years. The Army recognised the need for little more than a higher order of preparedness. Its strategic model essentially amounted to a replay of the World War II mobilisation with some improvements.(4) General Eisenhower described preparedness as:

> A state of organised readiness to meet external aggression by a timely mobilisation of public opinion, trained men, proved weapons and essential industries together with the unmatched spiritual sources of America .... (5)

In 1948 the Army Chief of Staff spoke of war as requiring 'a mobilisation' of all the country's resources 'industrial, agricultural and financial'.(6) The continuing influence of the mobilisation concept in American strategic thought took effect immediately after the Second World War in a programme of rapid demobilisation planned before the defeat of the Axis.(7) As only war was thought to warrant the support of large armies, the eventual achievement of peace required their dissolution.(8) One month after the war, the Joint Strategic Survey Committee estimated that 'a year or more would be required to reconstitute our military posture at a fraction of its recent power'.(9)

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(4) Huntington, op. cit., p.45.

(5) Ibid.

(6) Ibid., p.46.

(7) E.M. Bottome in The Balance of Terror. Boston: Beacon Press, 1971, pp.1-6, argues a somewhat 'revisionist' view that the significance of the demobilisation has been exaggerated, as the United States rapidly developed as a major atomic power, posing a serious threat to the USSR.

(8) Huntington, op. cit., p.35.

(9) Ibid., p.36.

The strategic views of the United States Congress closely resembled those of many military men in their still traditional quality. Many Congressmen shared the opinion of Representative Albert Engel of the House Sub-Committee on War Department Appropriations, whose primary concern was the reduction of defence spending, rather than any costly departure from the mobilisation concept. In the event of an emergency, Mr. Engel explained, '... Congress will be in session in ample time to make provision therefore'.(10)

Early Attitude to Atomic Weapons

With the dramatic reduction in American force levels, a gradually expanding US arsenal of atomic weapons constituted the only major post-war addition to the nation's military strength. However, the attitude of many in the armed services to the new weapons initially bore no mark of great enthusiasm or interest. Atomic power was certainly not regarded as the basis for transforming modern strategic thought. Indeed, many commanders retained greater confidence in the value of proven weapons than in the latest technological innovations.(11) The atomic bomb was not recommended by its lengthy and expensive production process (12) or the allegedly short supply of uranium, the meagre stock of operational atomic weapons available to the armed forces and the still significant problem of delivering the bombs to target. For all of these reasons during the

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(10) Edward A. Kolodziej, The Uncommon Defence and Congress, 1945-1963. Ohio State Press, 1966, pp.83-84.

(11) Urs Schwarz, American Strategy: A New Perspective. Garden City; New York: Doubleday, 1966.

(12) Michael Howard, ed., The Theory and Practice of War. London: Cassell & Co., 1965, p.201.

very early post-war period atomic weapons were regarded as little more than a much improved explosive to be set within the traditional form of American strategy.(13)

'Containment'

Foreign Policy v Defence Policy

In contrast to the largely unchanging nature of American military strategy in the first few years after the war, the nation's foreign policy rapidly adjusted to the steady deterioration in east-west relations which was to give birth to the 'Cold War'.(14) Washington's political response to the end of Allied unity came in an effort to restrict the limits of Soviet power through a foreign policy of 'Containment'.(15) While containment marked an American reaction to the new international environment, any effective effort to resist a Soviet military move against the west, or to constrain Soviet actions generally, required substantial military backing of a kind which clearly was not being provided. The US foreign and defence policies stood in sharp conflict, with the latter remaining fixed in a traditional form, incapable of supporting the country's international objectives. If containment, and later 'deterrence', were to prove viable, both Pentagon and State Department planning would have to be brought into closer alignment.

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(13) Howard, op. cit., p.280.

(14) Works on the Cold War conflict which began with US and Soviet perception of each other as adversaries, include D.F. Flemming, The Cold War and its Origins. New York: Doubleday, 1961; Gar Alperovitz, Atomic Diplomacy: Hiroshima to Potsdam. New York: Vintage Press, 1965; Martin F. Herz, Beginnings of The Cold War. Bloomington, Ind.: Indiana University Press, 1966; Louis B. Halle, The Cold War as History. New York: Harper and Row, 1967; Herbert Feis, From Trust to Terror: The Onset of the Cold War, 1945-1950. New York: W.W. Norton, 1970; P.M. Smith, discusses the US Army-Air Force identification of the USSR as an adversary in 1945 in The Air Force Plans for Peace, 1943-1945. Baltimore, 1970; Raymond Aron, The Imperial Republic, trans. by Frank Jellinek. London: Weidenfeld and Nicolson, 1973.

(15) Huntington, op. cit., p.15.

Groping Towards 'Deterrence'

Brodie and Wolfers Reject the Mobilisation Concept

With the tremendous increase in the complexity of weapons technology and the opening of the Cold War, the development of US strategy came under growing influence from the scientific and academic communities.(16) Although the official military strategy of the day was to retain much of its wartime character for some time, there were voices of 'modernisation' to be heard among analysts outside policy-making circles. Bernard Brodie, writing with Arnold Wolfers in The Absolute Weapon: Atomic Power and World Order (New York, Harcourt Bruce, 1946), assessed the atomic bomb as a 'quantun jump' in the development of offensive weapons, finally establishing the decisiveness of strategic bombing.(17) The appearance of the atomic bomb persuaded Brodie that the nation's traditional mobilisation strategy had to be rejected:

> The idea which must be driven home above all else is that a military establishment which is expected to fight on after the nation has undergone atomic bomb attack must be prepared to fight with the men already mobilised and with the equipment already in the arsenals. (18)

Brodie further argued for the adoption of a strategy of 'atomic deterrence':

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(16) H.B. Moulton, From Superiority to Parity. Westport, Conn.: Greenwood Press, 1973, pp.26-27; On the growth of post-war national security research, also see Edward L. Katzenbach, 'Ideas: A New Defence Industry', The Reporter, March 2, 1961, pp.17-21; Bernard Brodie, 'The Scientific Strategists' in Robert Gilpin and Christopher Wright, eds., Scientists and National Policy-Making. New York: Columbia University Press, 1964, pp.240-256; Gene M. Lyons and Louis Morton, Schools for Strategy. New York: F.A. Praeger, 1965; Bruce L.R. Smith, The Rand Corporation. Cambridge, Mass.: Harvard University Press, 1966; Hedley Bull, 'Strategic Studies and its Critics', World Politics, XX, 4 July 1968.

(17) Moulton, op. cit., p.27.

(18) Howard, op. cit., p.159.

> If the atomic bomb can be used without fear of substantial retaliation in kind, it will clearly encourage aggression. So much the more reason, therefore, to take all possible steps to assure that multilateral possession of the bomb, should that prove inevitable, be attended by the arrangements to make as nearly certain as possible that the aggressor who uses the bomb will have it used against him ...
>
> ... thus, the first and most vital steps in any American programme for the age of atomic bombs is to take measures to guarantee to ourselves in case of attack the possibility of retaliation in kind. The writer in making that statement is not for the moment concerned about who will win the next war in which atomic bombs are used. Thus far the chief purpose of our military establishment has been to win wars. From now on its chief purpose must be to avert them. It can have almost no other useful purpose. (19)

Arnold Wolfers wrote of a kind of 'mutual deterrence' as the future basis of the Soviet-American strategic relationship; 'It would not be surprising ... if a high degree of Soviet-American "Equality of deterring power" would prove the best guarantee of peace and tend more than anything else to approximate the views and interests of the two countries'.(20)

Writing in 1953, Wolfers also discussed the adoption of a policy of deterrence based upon 'counterforce' targeting, a policy in which the United States would announce its intention to attack only military targets in the event of war, provided that US cities were

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(19) Howard, op. cit., p.160.

(20) Moulton, op. cit., p.27; The author notes that occasionally in the text which follows the term 'deterrence' is used anachronistically. This is done for the purpose of clarity or convenience and in the knowledge that the concept was not fully developed in either the USA or the USSR during the early post-war years.

also left untouched.(21)

R-266

Further evidence of the emergence of the deterrence concept outside policy-making circles resulted from an Air Force request to the Rand Corporation in May of 1951 for a study on the selection of US strategic air bases overseas. The conclusions of a team of Rand analysts under Albert Wohlstetter, appeared in Rand Report R-266, Selection and Use of Strategic Air Bases.(22)

R-266, in its rejection of an Air Force plan for the transfer of bomber aircraft from peacetime bases in the United States to the major combat theatre either just before or after the outbreak of war, expressed a far more realistic view of the nature of modern strategic warfare than that which underlay the original Air Force plan.

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(21) Moulton, op. cit., pp.27-28; In addition to discussion of the deterrence idea in the United States, the concept was also under examination in Britain during the late 1940s, where it was eventually accepted as national policy before the United States moved to a deterrent posture. (Howard, op. cit., pp.160-161). Writing in 1948, Christopher Norborg in Operation Moscow, (London: Latimer House, 1948, pp.197-237), rejected the mobilisation concept and called for the adoption of what was, in effect, a policy of 'deterrence' through atomic 'forces-in-being'. Also on the deterrence theme, the former Chief of the British Defence Staff, Air Chief Marshal Sir John Slessor, wrote in 1953: 'The aim of western policy is not primarily to be ready to win a war with the world in ruins - though we must be as ready as possible to do this if it is forced upon us by accident or miscalculation. It is the prevention of war. The bomber holds out to us the greatest, perhaps the only hope of that. It is the greatest deterrent'. (Howard, pp.160-161). Also on deterrence in Britain, see Margaret Gowing, 2 vols., Independence and Deterrence. London: Macmillan, 1974.

(22) See A.J. Wohlstetter, F.S. Hoffman and H.S. Rowen, Selection and Use of Strategic Air Bases. Santa Monica: Rand Corporation, R-266, April 1954. A.L. Wohlstetter, 'Analysis and Design of Conflict Systems', in E.S. Quade, ed., Analysis for Military Decisions. Chicago: Rand McNally, 1964; and by the same author 'Strategy and the Natural Scientists' in Gilpin and Wright, op.cit.; E.S. Quade, 'The Selection and Use of Strategic Air Bases: A Case History' in Quade, op. cit.; Smith, op. cit., pp.195-240.

Further, R-266 offered the first penetrating analysis of the concept of 'first-strike' and 'second-strike' capabilities in a time when the first-strike/second-strike distinction was little understood. It gave the first serious consideration to the vulnerability of US strategic forces when confronted by substantial Soviet air-nuclear strength in the latter half of the 1950s.(23) As such, the Rand study significantly revised the Air Force understanding of deterrence, arguing that the validity of the concept would shortly rest upon deterring a strike against the US deterrent force itself through the deployment of a second-strike capability. Wohlstetter clearly made the point that deterrence would be seriously compromised by the command of anything less than a secure deterrent force, able to survive an atomic first-strike and proceed to the delivery of a devastating response.(24)

Air-Nuclear Power : Air Force Views

In addition to the work of private individuals and research groups, there was also support from within the armed services - particularly within the United States Air Force (USAF) - for modifications in strategic doctrine and planning. Air Force officers, for example, often spoke of the now central and decisive role of air-atomic forces. While bold claims on behalf of strategic air power were by no means unique in the early post-war years, the marriage of strategic aircraft with atomic bombs significantly increased the persuasiveness of those arguing for the decisiveness of USAF's

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(23) Smith, op. cit., pp.231-232; Quade, 'Selection and Use of Strategic Air Bases', op. cit., pp.62-63.

(24) Smith, op. cit., pp.232-234.

strategic mission.(25) Writing in 1948, General George C. Kenny, Commander of the Strategic Air Force and General Carl L. Spaatz, wartime Chief of America's Strategic Air Force in Europe and the Pacific, discounted the possibility of effective western resistance to a Soviet ground attack on Europe unless the major strategic role was assigned to air-nuclear forces. The critical element in any American response to a Russian invasion of Europe was to be atomic assaults against the industrial cities of the USSR, carried out by long-range bombers operating from bases in Europe. The United States would not repeat the experience of the last war by dispatching large armies to the Continent charged with slowly driving the enemy back beyond his own frontiers.(26)

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(25) The opinions of Generals Kenny and Spaatz expressed below formed part of an intensive post-war debate over the effectiveness of strategic bombing which included the B-36 controversy. Works dealing with the strategic bombing issue include, US Strategic Bombing Survey, European War. Washington D.C.: US Government Printing Office, Reports No.1-207, 1945; US Strategic Bombing, Pacific War. Washington D.C.: US Government Printing Office, Reports No.1-107, 1946; Fred C. Ikle, The Social Impact of Bomb Destruction. Norman, Okla.: University of Oklahoma Press, 1958; Bernard Brodie, Strategy in the Missile Age. Princeton, N.J.: Princeton University Press, 1959; Eugene M. Emme, ed., The Impact of Air Power. Princeton, N.J.: Van Nostrand, 1959; Lt. Gen. James Gavin, War and Peace in the Space Age. London: Hutchinson, 1959; Sir Charles Webster and Noble Frankland, The Strategic Air Offensive Against Germany, 1939-1945. London: H.M. Stationery Office, 4 vols., 1961; George H. Quester, Deterrence Before Hiroshima. New York: John Wiley and Sons, 1966.

(26) For the views of Generals Kenny and Spaatz, see P.M.S. Blackett, Studies of War. Edinburgh and London: Oliver and Boyd, 1962, pp.11-14.

As well as emphasising the critical role of atomic power in general, Air Force spokesmen also argued for the support of large air-atomic-forces permanently in being. In testifying before the Congress in 1946, General Spaatz advised:

> The first requirement of the peacetime Air Force is a combat force-in-being; ready for immediate employment; thoroughly trained; well equipped; wisely disposed on strategic bases, and capable of rapid concentration. (27)

Government Studies

While Air Force officers were expressing views which did not entirely conform to established strategic precedent in the United States, far more radical statements were issuing from the Department of State. In June of 1948, the State Department produced a study paper which described the functions of the nation's armed forces 'as a deterrent', an 'encouragement to nations endeavouring to resist Soviet political aggression', and also to 'wage war successfully in case war should develop'.(28) If the armed forces were to serve these ends, American strategic planners would have to recognise that a policy 'based on the maintenance of a permanent state of adequate military preparations is better than an effort pointed towards a given peak of danger'.(29) In place of the traditional American view that armies were to be mobilised to win wars whenever they might occur and then allowed to dissolve after victory, the State Department study group was arguing for their permanent maintenance as an influence on the policy of other states or, in other words, for the adoption of a 'deterrence' strategy.

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(27) Kolodziej, op. cit., pp.83-84.

(28) Huntington, op. cit., p.40.

(29) Ibid.

On January 10, 1950, President Truman ordered both the State and Defence Departments to conduct a general re-examination of US foreign and defence policies.(30) The document which resulted, labelled NSC-68 recommended 'an immediate large-scale build-up in our military and general strength and that of our allies with the intention of righting the power-balance and in the hope that through means other than all-out war, we could induce a change in the nature of the Soviet system'.(31) In brief, the review called for an increase in America's limited and total war capabilities for 'deterrent' purposes.

Evidence of Change in US Defence Policy: The Emergence of 'Deterrence'

Growing Air-Atomic Element in US Strategy

Despite the arguments for change, American defence policy in the early post-war period retained much of its traditional character. However, there was evidence of important modifications underway, including the rapidly expanding role of air-atomic forces in American strategy. This expansion was encouraged by the desire for a military counter-weight to the large Soviet presence in Europe where it was felt that a clear display of western power was required to present a Soviet attack. As it was thought impossible to compete with the USSR in conventional strength, the only option available to the USA was reliance upon its still unbroken atomic monopoly. In fact, the United States was very probably unable to launch a major atomic assault in the very first years after the war, lacking both an adequate

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(30) Huntington, op. cit., pp.48-49; Also see 'NSC-68: Prologue to Rearmament' in Warner R. Schilling, Paul Hammond and Glenn H. Snyder, Strategy, Politics and Defence Budgets. New York: Columbia University Press, 1962.

(31) Huntington, op. cit., p.51.

arsenal of bombs and bombers. However, as demobilisation had stripped the country of nearly every other form of strategic power in any substantial quantity, the atomic bomb was virtually all that remained to field against an enemy.

Evidence of the growing commitment to air-atomic power appeared in the Congressional attitude toward defence expenditure. While Congressional commitment to restraint in defence spending caused the Army and Navy to suffer budgetary reductions, administration requests for air power appropriations were approved and sometimes even increased.(32) By the late 1940s, the legislators were convinced that the old wartime coalition had finally ended. They also believed that the most effective and economical strategic response to the collapse of Allied unity rested with atomic bombs loaded aboard Air Force bombers, targeted on the Soviet Union.(33)

The Development of SAC Begins

In October of 1948 General Curtis E. Le May assumed direction of the Strategic Air Command (SAC), a force created two years earlier but never properly trained or equipped. General Le May spent eight years equipping SAC with the latest bomber aircraft, expanding its complex of bases and training its personnel to the highest performance standards. Le May's achievement with SAC was significant as another stage in the development of a growing air-atomic emphasis in US strategy during the late 1940s; but more important, the development of the Strategic Air Command in the early 1950s as a massively powerful elite force dedicated to permanent and

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(32) Robert E. Osgood, Limited War. Chicago: University of Chicago Press, 1957, p.44.

(33) Ibid., pp.151-152.

instant combat readiness was a major move in the direction of a policy of nuclear 'deterrence' through forces-in -being. As such, SAC represented both an operational military and conceptual advance in US defence policy.(34)

However, by May of 1952 the US Air Force was already concerned about the vulnerability of SAC bases to Soviet air attack, and requested that the Rand Corporation undertake a vulnerability study.(35) Rand's alarming conclusions, as expressed in R-266, played a significant part in modifying USAF policy. After an examination of R-266 the Air Force abandoned its plan for basing US strike forces abroad in favour of the deployment of SAC within the United States, with only the explacement of staging facilities abroad,(36) In accepting many of the Rand proposals, the Air Force demonstrated its concern for the vulnerability of SAC in the second half of the 1950s and its recognition of the first strike/second strike distinction, as well as its growing commitment to nuclear deterrence, founded upon a secure deterrent force.

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(34) Huntington, op. cit., pp.308-312.

(35) Smith, op. cit., p.209; Smith notes (fn.29, p.232), that 'a study of the vulnerability of SAC bases in England done in 1950 by Hugh J. Miser of the Air Force's Operations Analysis Office, and a twelve-volume WSEG (Weapons Systems Evaluation Group) study dealing with SAC's capabilities, done in 1950, reportedly touched obliquely on problems of securing the strategic deterrent force'. Smith also notes David H. Bebeau, Hugh J. Miser, Dale E. Oyster, The Estimated Effect of a Soviet Atomic Attack on the US in 1952 and 1954. US Air Force Operations Analysis Office, Special Report No.4, October 18, 1950, as among those early studies which considered the vulnerability problem, but did not call for a deterrent capable of delivering an unacceptably damaging blow, after the launch of the enemy's atomic first-strike.

(36) Smith, op. cit., pp.235-236.

The B-36 Controversy

The debate in 1949 between the US Navy and Air Force over the wisdom of constructing a new aircraft carrier, as opposed to the B-36 bomber, broadened into a controversy encompassing the nation's overall strategy and further illustrated the shift to air-atomic weapons in American defence policy.(37) Perhaps of greater interest today than the argument over bombers versus aircraft carriers, is the fact that the successful outcome of the dispute for the Air Force further documented the rise of atomic weaponry in US strategic doctrine from merely a new explosive to the key element in the national strategy. However, the B-36 controversy is also noteworthy as one of the final occasions on which a major strategic issue was examined in entirely 'non-deterrence' terms. The officers embattled over the B-36 were debating the surest and shortest road to victory in any future struggle with the USSR, not the most persuasive of 'deterrent' postures.(38)

Atomic Emphasis Continues despite the End of US Atomic Monopoly

In September of 1949 the USSR exploded its first atomic device, three years before American experts had thought it possible. This was an accomplishment which might have significantly reformed US strategy, as it suddenly upset the basis of a policy founded upon America's unique atomic capability. Before the Soviet atomic

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(37) Kolodziej, op. cit., pp.108-111; Osgood, op. cit., p.153.

(38) Huntington, op. cit., pp.299-300; On the B-36 issue, also see Investigation of the B-36 Bomber Programme. Hearings before the Committee on Armed Services, US House of Representatives, 81st Cong., 1st Session, on H. Res. 234, August-October, 1949.

explosion it was arguable that the United States could rely on its unique technological advantage in a struggle with the major land power. However, with the Soviet development of an atomic capability, any American use of atomic weapons would expose the United States to a similar attack. Further, any American threat to resort to atomic weapons promised to become increasingly incredible as the USSR's arsenal of bombs expanded and its delivery systems improved.

Despite the Soviet test, no urgent reshaping of American strategy was undertaken. Indeed, rather than inspire a shift in strategic planning, the alarming news from the Soviet Union only seems to have intensified the US commitment to air-atomic forces. There was no apparent realisation that the spread of the new technology had seriously damaged the basis of the American position. The Soviet achievement seemed only to fire an effort to develop bigger and better bombs, in support of the newly established atomic bias in American strategic doctrine.(39) The military's 'just another bomb' attitude in the immediate post-war period was gradually being replaced by the widespread belief that an air-nuclear attack would likely prove decisive in a future war.(40)

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(39) Osgood, op. cit., pp.157-158.

(40) Concentrating on nuclear weapons and strategic aviation, the Truman Administration presided over a corresponding decline in the nation's non-nuclear strength until the outbreak of the Korean War, as conventional forces were made to suffer from a programme of economy in defence spending. (Osgood, op. cit., pp.154-156).

The Hydrogen Bomb

The debate in 1949 over the hydrogen bomb ('H-Bomb') and the final decision approving its development, provide a further indication of the increasing American emphasis on the new weapons technology, as well as evidence of an emerging nuclear 'deterrence' concept. There was little American interest in developing a thermonuclear weapon until the USSR's first atomic test raised the question of finding a strategic counter-measure to ensure western security.(41) The possibility of a crash programme to develop a thermonuclear bomb as an appropriate 'response' opened a spirited controversy over the H-bomb in particular, American strategy generally, and the danger of an arms race between the USSR and the United States.(42)

After considerable deliberation and debate involving several government agencies and departments, as well as a number of university academics, on January 31, 1950 President Truman approved 'H-bomb development'. On March 10, he further ordered the construction of production facilities for the new bombs.(43)

The controversy over thermonuclear weapons marks a highly significant stage in the American development of a strategy of nuclear deterrence. The debate was distinctive in that the scientists, politicians and generals ranged on both sides of the question were not arguing over how best to win a future war. Indeed, it was widely held by both opponents and supporters of the hydrogen weapon that it would be of little operational military value. Unlike the B-36

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(41) Huntington, op. cit., pp.300, 304.

(42) Robert Gilpin, American Scientists and Nuclear Weapon Policy. Princeton, N.J.: Princeton University Press, 1962, pp.73-97.

(43) Huntington, op. cit., pp.304, 306.

quarrel of the same period, the dispute over the 'H-bomb' concerned a weapon which all agreed could never be used without disastrous consequences. However, the fact of its 'uselessness' was the strongest, if not the only, recommendation for the new bomb in the minds of its advocates. The hydrogen bomb was a weapon intended to 'deter' rather than to defeat the Soviet Union and the President's decision in its favour recorded a major move in the emergence of the nuclear deterrence concept in the United States.(44)

The Commitment to Europe

While American 'deterrence' was primarily to be implemented in nuclear terms, the early post-war years also recorded a largely conventional military expression of the concept which represented an important change in US defence policy. For generations the United States had rejected any suggestions of indefinitely maintaining large armed forces for any purpose other than the defeat of an enemy. However, as one of the founding members of the North Atlantic Treaty Organisation (NATO), America agreed to the maintenance of substantial conventional, as well as atomic forces, in Britain and on the European continent. This unprecedented commitment demonstrated a considerable advance in the American understanding of the relationship between peacetime military strength or 'forces-in-being' and the nation's international political objectives. American forces were not dispatched to Europe to resist a Soviet invasion already in progress or even in response to the danger of an imminent conflict. Although

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(44) Huntington, op. cit., pp.298-300, 305-306; also on the Hydrogen bomb, see Warner Schilling, 'The H-Bomb Decision', Political Science Quarterly, LXXVI, No.2, March 1961; Norman Moss, Men Who Play God. Middlesex: Penguin, 1970.

they were obviously intended to defend Europe if the need arose, a major rationale for the troop commitment was the 'deterrence' of a Soviet conventional assault on the NATO countries.(45)

The Truman Administration Attempts to Implement 'Deterrence' : 1950-1952

Korean Rearmament

The simple existence of the deterrence concept within the ranks of the nation's military and civilian leadership was not enough to achieve a genuine deterrence posture. Deterrence required the additional backing of a substantial increase in American force levels. In President Truman's final years the administration attempted, with some success, to achieve the heightened force levels which deterrence demanded, but which would likely have been entirely unobtainable had not the outbreak of the Korean War in 1950 provided the means of winning Congressional approval of higher defence spending. However, the Korean episode also demonstrated that the American public and the United States Congress were not yet convinced of the need for any expansion of military strength outside the Korean context, let alone the wisdom of adopting a broadly based deterrence strategy.(46)

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(45) Huntington, op. cit., pp.312-326.

(46) Works on the Korean War include, 'Atomic Weapons and the Korean War', Bulletin of the Atomic Scientists, VI, July 1950; J.D. Hittle, 'Korea - Back to the Facts of Life', US Naval Institute Proceedings, LXXVI, December 1950, pp.1289-1297; R.M. Poats, Decision in Korea. New York: McBride Co., 1954; A.L. George, 'American Policy-Making and The North Korean Aggression', World Politics, VII, January 1955, pp.209-232; Harry S. Truman, Memoires, Vol.II, Years of Trial and Hope. Garden City, N.Y.: Doubleday, 1956; Peter Oglobin, The Korean War. Cambridge, Mass.: MIT Centre for International Studies, American Project C/58-19, Working Paper III, 1958; H.A. De Weerd, The Korean War: Political Limitations. Santa Monica, Cal.: Rand Corporation, P-2059, August 5, 1960; T.R. Fehrenbach, This Kind of War. New York: Pocket Books, Inc., 1964.

Differing Motivations for Rearmament

Although the war inspired widespread recognition of the need for rearmament, the nation's leaders differed as to the ultimate objectives of the policy. A number of factors argued for rearmament in the minds of most observers. There was the obvious need to conduct the Korean War. The war was the prime, if not the exclusive, motivation for the Congress and the American people.(47) The rearmament programme was also seen by some senior commanders as the route to an improved mobilisation base.(48) However, many in the executive branch looked upon the Korean rearmament as an opportunity to acquire sufficient forces permanently in being to 'deter' the USSR from initiating a general war, or, failing in its deterrence objective, to prepare the United States to successfully wage such a conflict.

Air-Nuclear Forces

It was, therefore, within the context of the Asian war that the administration was able to acquire the funds for the expansion of US air-nuclear power, as well as its ground strength in Europe. This was to be done in the light of NSC-68's warning that 1954 would be a year of particular danger, although the Korean War was expected to be long over by that date.(49) In 1951 the Joint Chiefs of Staff proposed the enlargement of the Air Force from the ninety-five wing total planned for 1952 to 143 wings by the middle of 1954, a proposal which the administration accepted, attached to its own target date of July 1955.(50) This period also recorded General Curtis Le May's

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(47) Huntington, op. cit., p.55.
(48) Ibid., pp.57-59.
(49) Ibid., p.60.
(50) Ibid., p.61.

continuing development of SAC. By the end of the Truman presidency he had achieved considerable success in transforming what had been an inadequate force for either nuclear warfare or deterrence into a large, well-equipped and highly trained permanently combat-ready nuclear strike force, of no use in Korea, but suitable for both full-scale strategic nuclear conflict or the implementation of a policy of nuclear deterrence.

Conventional Forces

While US defence planners would later return to NSC-68's identification of 1954 as the year in which the danger of an east-west conflict would be greatest, in the autumn of 1950 the Joint Chiefs of Staff pronounced July of 1952 to be the peak risk period, requiring an Army of eighteen divisions and twelve regimental combat teams, 1,161 naval craft, two-and-a-third Marine divisions, ninety-five Air Force wings and a total armed force of 3,600,000 men.(51)

By 1952, the Army in fact stood at twenty divisions and eighteen regimental combat teams; the Navy at 1,300 ships and Marines at three divisions and three air wings; and the Air Force at ninety-five air wings, for a manpower total of 3,636,000.(52) In support of its commitment to European defence from 1949-1951, the United States pressed for the inclusion of German troops into the structure of western defence, these troops to join the four US divisions sent to Europe in 1949. The Americans also established the Seventh Army in Germany and placed Dwight Eisenhower in command of SHAPE (Supreme Headquarters Allied Powers Europe). Further, in 1952 the Lisbon

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(51) Huntington, op. cit., p.60.

(52) Ibid., pp.60-61.

Conference of the NATO powers set a ninety division NATO force level to be met by the end of the year. The Korean rearmament programme thus also confirmed the maintenance of a powerful NATO based European defence effort as a major objective of American policy, inspired by the desire to deter or resist a Korean-type conflict launched by the USSR on the European Continent.(53)

Rearmament Ends with Korea

Whatever the motives of rearmament's promoters, the growing distaste for and eventual end of the war which had initiated rearmament eventually slowed its pace. As international tensions were seen to decline and the nation's defence needs consequently diminish, force level target dates such as the Air Force goal of 143 wings were pushed back, weapons production declined and four billion three hundred million dollars were trimmed from the administration's defence budget proposals for fiscal 1953.(54) Nevertheless, while the programme to provide America with a broadly based military establishment was largely ended by the Korean armistice, the painful experience of American reverses on the ground against the Communist forces clearly illustrated to many the need for a conventional build-up and supported those advocating substantial ground strength throughout the 1950s and early 1960s. However, the Korean rearmament programme was most significant as an attempt by the Truman Administration to arm the United States not only in preparation for future conflicts but also in support of a strategy of deterrence, an effort which although cut short by the Congress, was not without success.

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(53) Huntington, op. cit., p.62.

(54) Ibid., p.63.

The Role of 'Action-Reaction' Process in the Development of US Strategic Doctrine : 1945-1952

The development of American strategic thought in the 1945-1952 period does not confirm the example of Soviet actions as the guiding principle of American strategic planners. Although the simple existence of the USSR as a powerful adversary, as well as a number of individual Soviet actions, very significantly affected the broad shape of US strategy, its general character and specific features were, in fact, the product of a generous and disparate mix of external and internal influences.

Containment

While many of the significant changes in policy during the Truman years were in fact of mixed origins, the major foreign policy development of the period - the adoption of containment - represented a clear reaction to Soviet political and military actions or, at least, a response to the American interpretation of Russian actions. The rapid post-war decline in Soviet-American relations generally, Soviet policy in eastern Europe in particular, the maintenance of large Soviet conventional forces after the war, the activities of Communists in Greece and Turkey, all contributed to the American perception of the USSR as a dangerous and aggressive adversary. The identification of the Soviet Union as a 'threat' logically led to a foreign policy designed to limit the extent of the adversary's power and influence.

The Mobilisation Tradition and its Critics

Despite the early political assessment of the USSR as an adversary, the nation's strategic doctrine failed to 'react' to the beginning of the 'Cold War' with the alacrity of its foreign policy. America's native mobilisation tradition continued to influence strategy, persuading many observers that the support of anything more then an improved version of pre-war policy was unnecessary and impracticable. Such strategic 'conservatism', setting American foreign and defence policies at odds, drew criticism which was in part a response to those Soviet actions which had inspired a foreign policy of Containment. The perception of the USSR as an aggressive force, with large armies permanently on station in Europe, prompted a call for greater American military resources with which to resist or contain Soviet pressure. However, much of the early criticism of the mobilisation concept and demands for the maintenance of powerful forces-in-being or for a strategy of deterrence were not a direct response to Soviet actions or deployments, as the USSR was still badly affected by the struggle with Germany and was thought to be several years from its first atomic explosion. Rather than a direct reaction to the Soviet Union, the criticism of mobilisation was largely based upon the strategic or operational implications of the new American weapons technology for any future conflict after the inevitable end of the US atomic monopoly. The United States must be prepared for victory at the very outset of war or risk disaster. US Air Force criticism of established strategy was also likely influenced by its World War II commitment to strategic bombing and its individual service interest in further increasing the significance of air power in American strategy.

Government Study Papers

The two major government study papers produced during the Truman period can be considered as broadly responsive to the USSR in that each was framed with the Soviet Union clearly in mind as a serious and growing threat. The 1948 State Department effort called for a major reformation of US defence policy in response to the political and military challenge posed by the Soviet Union. Similarly, the later NSC-68 study was generally motivated by the worsening in east-west relations and specifically by the unexpected Soviet atomic test in 1949.

However, while the origins and conclusions of these studies were rooted in the affects of Russian power and potential on the viability of American strategy, many of their recommendations were not based upon existing Soviet capabilities. The 1948 paper was written during the American atomic monopoly and even NSC-68 was produced long before the Soviet Union was to command a major atomic force. Rather than representing direct responses to prior Soviet stimuli, their assessments were, in part, based upon American estimates of future Soviet capabilities.

The Role of Atomic Weapons in US Strategy : 1945-1949

The growing American reliance on atomic weapons in the late 1940s was a part of the military effort intended to contain the USSR; but the increasing stress on atomic power as a major expression of Containment cannot be regarded as a direct reaction to Soviet actions. It was certainly not the only conceivable or inevitable 'response' which the United States might have chosen in a period when the Soviet Union was without an atomic capability of its own. The gradual move

in the direction of the new weapons was instead the result of domestic American influence. These domestic factors included the very early and extensive post-war demobilisation programme, undertaken as a result of internal political and economic pressures and encouraged by US military traditions, which left the American leadership with very inadequate conventional strength and no effective means of overcoming the political and economic objections which would have greeted any effort to restore the nation's armed forces. The great dearth of conventional strength and the unwillingness to increase general purpose force levels, therefore, suggested atomic weapons as the only available source of military power, a source which was further recommended by its exclusive possession in American hands. With only the United States in command of the atomic bomb, it was possible to rely on little more than its simple existence in the US arsenal - almost regardless of the numbers of weapons actually produced - to impress the Soviet Union with America's strength. As such, atomic weapons provided a relatively economical alternative to the large conventional forces which were unobtainable. Finally, the atomic emphasis was encouraged by arguments from the US Air Force convinced of the decisiveness of strategic bombing and assured of a major, if not dominant, role in any air-nuclear strategy.

Intensification of Air-Atomic Emphasis in US Strategy : 1949-1952

The increased significance attached to atomic-nuclear weapons in US strategy following the end of America's atomic monopoly was a clear reaction to the first Soviet atomic test in 1949. However, once again the move to an even heavier reliance on the new weapons technology was not an inevitable, directly reflexive, or emulative response. Had the United States chosen to counteract directly a Soviet development which, taken together with Russia's large conventional forces, threatened to compromise America's atomic strategy, it might have 'responded' with increased conventional strength. Instead, for political, economic and technological reasons, similar to those which originally prompted reliance on atomic weapons, the United States chose to stress air-nuclear power as its major response to the USSR's newly demonstrated atomic capability.

The 'H-Bomb'

A very significant feature of the US reaction to the unexpected Soviet atomic test and a major event in the generally expanding role of the new weapons technology in US strategy, was the American decision to develop an 'H-bomb'. However, while the decision to produce the new weapon was intended as a reaction to the emergence of the USSR as an atomic power, once again the character of the American reaction was in no sense fated by Soviet actions. The 'H-bomb' decision, as well as the increasing role of fission and fusion weapons in US strategy, was largely an independent American judgement

prompted by the nation's budgetary objectives, domestic, political circumstances and technological resources.

Air Force Basing and R-266

The original Air Force plan for basing its strategic aircraft overseas was responsive to Soviet actions in so far as overseas basing was regarded as a necessary reaction to the 'threat' of a Soviet ground assault on western Europe. Nevertheless, the specific judgement that bombers represented the most suitable instruments for the expression of that 'reaction' was determined by the same array of domestic political and economic factors which were rapidly shifting US strategy as a whole towards an air-nuclear emphasis. Certainly the transfer of aircraft to Europe was not the only conceivable response to a Soviet 'threat' which was to remain largely conventional for some time to come. The request to the Rand Corporation for a study of base selection was a feature of the nuclear response to the USSR's conventional capabilities in Europe. The concern over the vulnerability of US bombers to air attack and the request to Rand for an examination of the problem were also reactions to the USSR - in this instance reactions to the prospective development of the USSR as a major air-nuclear power. The Rand study itself (R-266), was framed within the context of Soviet developments and potential. Its suggested reform in basing policy and modifications of the deterrence concept were argued largely in terms of the need to adjust American policy to Soviet capabilities. However, the Rand conclusions on vulnerability and its policy recommendations were largely based upon the Corporation's own estimate of the future development in Soviet air-nuclear strength and

not upon an existing Soviet capability. Further, other factors including the question of costs, were also involved in shaping Rand's proposals. Similarly the apparent Air Force acceptance of many of R-266's suggestions was inspired by the growing Soviet 'threat'. Premier Malenkov's announcement of an 'H-bomb' test was one specific Soviet action which encouraged the adoption of the basing study's views. Here, too, however the Air Force 'reactions' were supported by projections of future Soviet capabilities. Further, the Air Force approval of R-266 was also influenced by the cost factor. The construction of staging installations abroad was thought to be far more economical than the original plan for overseas deployment.(55)

The Commitment to Europe

While much of American policy affecting nuclear forces cannot be charged to prior Soviet actions, the American decision to assign US forces to Europe permanently marked a clearly direct and emulative western response to the Soviet Union's substantial general purpose forces in Europe, attempting to match Soviet deployments with western forces of the same kind. However, the subsequent failure of Alliance members - including the United States - to meet its early troop level pledges to NATO, reveals the less than sharply sensitive or faithfully emulative nature of even this uncommonly direct response to Soviet actions and the powerful influence of domestic economics.

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(55) Smith, op. cit., p.234.

The Korean Experience

The Korean War also prompted at least one specific, if limited, conventional reaction within the United States government. Korea confirmed the administration's belief that larger US general purpose forces were necessary if the United States was either to deter or resist conventional advances against America's allies in Asia, or more importantly, in Europe as well. However, despite the administration's interest in a greater non-nuclear capability, the eventual withdrawal of public and Congressional support from rearmament revealed that most Americans were not yet ready to 'react' to the possibility of future conventional attacks by supporting an expansion of US conventional forces. The 1950s were instead to record a decided preference for economy in defence spending through nuclear deployments.

The Role of Action-Reaction in the Emergence of Deterrence : 1945-1952

Among the most significant developments in US strategic thought in the 1945-1952 period was the move from America's long-established commitment to mobilisation, first in favour of a concept of 'forces-in-being' and eventually in the direction of deterrence. These profound changes or 'break-points' in the history of US strategic doctrine were, in broadly conceptual terms, reactions to the USSR. Forces-in-being was prompted by the existence of the Soviet Union as a powerful adversary whose vast resources, large conventional armies and foreign policy interests, demanded the permanent maintenance of powerful American forces. Until the time of the USSR's first atomic

test, it was thought possible for the United States to rely on its technological monopoly to provide for western security.

However, with the loss of America's unique technological advantage and the prospect of Soviet development as a major atomic power, the United States was strongly impelled by the nature of atomic warfare, eventually to establish some kind of 'deterrence' as its first priority. In short, the gradual almost inevitable emergence of deterrence which began in the United States during these years was induced by the critical need to influence or 'deter' a powerful opponent in possession of a kind, and in time, a quantity of destructive power which was to make the prospect of even a successful American war effort against the Soviet Union extremely unattractive. Beyond the original emergence of the deterrence concept, its subsequent development was also influenced by the Soviet Union. This was clearly the case over the issue of SAC basing in which projections of Soviet air power raised the issue of first and second strike capabilities, as well as the problem of providing a secure deterrent force.

However, before assigning full responsibility to the USSR for the emergence of deterrence in a direct and immediate relationship of Soviet-American stimulus and response, it must first be noted that the new weapons technology itself, with the capacity for accomplishing obliterating destruction in a matter of hours, would likely have given birth to deterrence as a concept, if not as an operational policy, even without the Soviet Union's atomic test in 1949. Indeed, the earliest calls for deterrence in the United States, predated the first Soviet atomic test by at least three years.

Second, while the Soviet Union played a great part in accelerating the acceptance of deterrence, the growing support for the concept in Washington was, in large part, based upon American projections of future Soviet developments rather than representing a 'reaction' to existing capabilities. The Soviet Union was not to command a major nuclear strike force capable of reaching North America for several years after the end of the Truman period in which the American deterrence concept first emerged and in which SAC began to attend to the question of its own vulnerability.

Finally, although the USSR must be fundamentally credited with inspiring the move to deterrence in the United States as a strategic concept, the character or quality of American deterrence was largely shaped by domestic economic and political factors which prevented the deployment of powerful conventional armies and, therefore, determined that the new concept would be expressed by the United States almost entirely as a strategy of nuclear deterrence, rather than as a more broadly based interpretation of the principle.

Chapter 2

The Stalinist 'Freeze' on Strategic Doctrine

Stalinist Military Science

Soviet military science in Stalin's post-war years was presented as largely the personal achievement of Stalin and often labelled as 'Stalinist Military Science'.(1) It was said to be an original and unique thesis: Marxist, Stalinist, scientific and consequently the guarantor of inevitable victory, as was brilliantly demonstrated in the 'Great Patriotic War' 1941-1945. In fact, however, Stalin's great 'innovation' was rooted in the early doctrinal controversies of the Soviet Republic, as were the issues argued in the re-examination of doctrine after his death. The assertions of the unique and superior character of Stalinist Military Science were reminiscent of demands for and assertions of a uniquely Communist or 'proletarian' military doctrine in the 1920s, a doctrine also lauded for its superiority. War Commissar L.D. Trotsky's denunciation of such claims as the idealisation of weakness and his insistence that the realities

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(1) Soviet strategic terminology generally defines military doctrine as the official policy of the state on military matters in general: military art is the accepted body of thinking and planning for waging war in accordance with military doctrine: military science represents the sum of military thinking on alternative theories and contingency plans for waging war; See Slovar osnovnykh voennykh terminov, Moscow, Voenizdat, 1965, 'Biblioteka Ofitsera': 'Voennaya doktrina', p.41, 'Strategiya', p.220, 'Voennoe iskusstvo', p.44, for official Soviet definitions.

of warfare applied to communists and capitalists alike, were views again advanced in the 1950s. Similarly, Trotsky's rejection of doctrinal rigidity and the very idea of discovering any timeless strategic truths, as well as his preference for realism and flexibility, were also to have a post-war rehearing. Further, the early dispute over the value of the Soviet Civil War as a model for the doctrine of the 1920s and later was, in a sense, repeated when the Great Patriotic War was reconsidered as a guide to contemporary doctrine. Finally, the doctrinal debate of the 1920s illustrated what was to be the continuing domestic political significance of military doctrine. Just as the opponents of Trotsky's views employed the dispute as part of an assault on his personal political position, Stalin secured the inviolability of 'Stalinist Military Science' in support of his personal political interests.(2)

Signs of 'Stalinist Military Science' in the exclusive sense had already emerged as early as 1942. Its alleged superiority over any 'imperialist' attempt at scientific military thought was said to rest upon its ideological foundation. As a consequence of the insight provided by Marxist methods of analysis, 'Stalinist Military Science' was

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(2) On the military debate of the 1920s, see John Erickson, The Soviet High Command. London: Macmillan, 1962, pp.39, 50-51, 82, 127-129, 134-136.

not - as in the west - a mere collection of subjective opinions on narrow operational points. It was instead a genuinely scientific discipline, offering the student a thoroughly reasoned, objective and fully comprehensive examination of warfare as a broad social phenomenon. Moreover, it afforded socialist peoples a unique and penetrating understanding of the economic and moral character of all capitalist states.(3)

By comparison, the western version of 'military science' - blind to Marxist perceptions - was incapable of producing a military science worthy of the name. The imperialist powers were left with only a highly subjective 'military art', unaware of the fundamental nature of warfare as a complex socio-economic phenomenon. Such a trivial conception revealed only a narrow and highly specialised understanding. In short, western strategy was often reduced to little more than a tournament of generals, a competition of military tradesmen and their over-valued tools.(4)

The Soviet victory over Germany in the Second World War was offered as conclusive proof of the superiority of Soviet,

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(3) Dr. Kenneth Whiting, 'Post-War Strategy' in Asher Lee, ed., The Soviet Air and Rocket Forces. New York: F.A. Praeger, 1959, pp.89-90.

(4) Ibid., pp.89-90.

or more specifically, Stalinist Military Science. The Great Patriotic War experience was to be closely studied as the model for all future conflicts.(5) Stalin prescribed that '... the whole preparation of the army' and 'the further development of Soviet Military Science' in the future 'must be conducted on the basis of a skilful mastery of the experience of the recent war'.(6)

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(5) R.L. Garthoff, How Russia Makes War. London: George Unwin, 1954, pp.58-59.

(6) R.L. Garthoff, Soviet Strategy in the Nuclear Age. London: Atlantic Books, 1958, p.62; On the study of the Great Patriotic War, see Sbornik materialov po istorii Sovetskogo voennogo iskusstua v Velikoi Otkchstvennoi voine 1941-1945 gg., Vypusk H. (ed. Lt. Gen. V. Vorob'ev): Frunze Military Academy Moscow, Voenizdat, 1956, 510 pp. (Copy available: Defence Studies, University of Edinburgh). A valuable compilation of wartime and immediate post-war studies of Soviet operational performance. (This volume carries a Soviet security classification); Also see Lt. Gen. P.A. Zhilin, (ed.), Ocherki Sovetskoi voennoi istoriografii, Moscow, voenizdat, 1974, chp.7, On investigation of Soviet combat experience during the Great Patriotic War, pp.224-234 (for wartime and post-war military analysis, up to 1953/54: remainder of chapter runs to the early 1970s).

The Soviet war effort against Nazi Germany was also offered as a glorious testimonial to the genius of Stalin himself. Stalin was not only the architect of the recent victory, but was increasingly described as the nation's supreme military strategist.(7) As the father of 'Stalinist Military Science', ostensibly developed during the Civil War and certainly in the Great Patriotic War, Stalin appeared to displace or at least overshadow all other strategic thinkers. The 'Stalinisation' of military science involved reducing the significance of all non-Russian influences on the development of the nation's strategic thought. The reputation of General M.I. Kutuzov was raised to new heights, overtaking that of General Barclay de Tolly whose family was of foreign origin and whom Frederich Engels had labelled the superior commander in the war against Napoleon. By implication the demotion of de Tolly masked an adverse reflection on the strategic thought of Engels.(8) In an article published in Bol'shevik in 1947, Stalin also attacked the long established position of Clausewitz in Soviet military writing.(9) Although many commentators including Marx, Engels and Lenin had repeatedly

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(7) Garthoff, How Russia Makes War, op.cit., pp.184-192.

(8) Ibid., pp.50-51.

(9) 'Comrade Stalin's Answer to a Letter from Comrade Razin', Bol'shevik, No.3, 1947.

praised Clausewitz, Stalin announced that Clausewitz 'has become obsolete as a military authority' and that 'it is ridiculous to take lessons from Clausewitz now'.(10) As with Engels and General de Tolly, the post-war revision of Clausewitz marked an implied criticism of the strategic judgement of Lenin. Stalin's 1947 article also included a far more explicit statement of Lenin's limitations in military affairs. Stalin explained:

> Lenin did not consider himself an expert on military affairs. He did not consider himself an expert on military affairs not only in the past, before the October Revolution down to the end of the Civil War. In the Civil War Lenin obliged us, then still young comrades of the Central Committee, 'to study military affairs precisely'. As for himself, he frankly told us that it was already too late for him to study military affairs. (11)

Major General Isayev concurred with the view that Lenin

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(10) Garthoff, How Russia Makes War, op. cit., pp.55-56.

(11) Ibid., p.28; Also on the Stalinisation of military doctrine, see John Erickson, 'Lenin as Civil War Leader' in Leonard Shapiro and Peter Reddaway, (eds.) Lenin the Man, the Theorist, the Leader. London: Pall Mall Press, 1969.

had never claimed military expertise[12] and had advised his younger colleagues to study military problems. Isayev further asserted:

> This task fell chiefly and mainly on Lenin's closest and principal associate, Joseph Vissarionovich Stalin .... Comrade Stalin not only thoroughly mastered military science, but in the very fires of the Civil War worked out and brilliantly applied the principles of his military science and strategical art, a science of an entirely new type. (13)

In short, in the wake of the Great Patriotic War, Stalin was firmly established as the world's foremost strategic thinker and the creator of a major and original advance in military science which had displaced all earlier analyses.

An important product of Stalin's examination of military affairs was the identification of five principles of warfare. These principles, or 'permanently operation factors', were:[14]

1. The stability of the home front;
2. The morale of the Army;
3. The quantity and quality of divisions;
4. The armament of the Army; and
5. The organising ability of the command personnel.

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(12) This view has recently been reversed in Soviet writing: Lenin is now credited with commanding expertise and, in a sense, 'Stalinist Military Science' has been heavily 'Leninised' - both positions being serious distortions. See, for example, V.I. Lenin: Sovetskie vooruzhennye sily. Moscow: Voenizdat, 1969 (2nd Edn.) passim.

(13) Garthoff, How Russia Makes War, op. cit., p.29.

(14) Ibid., p.34.

The 'permanently operating factors' were said to be among the fundamental principles underlying Soviet strategy, determining the outcome of any war which imperialism might choose to launch.(15) The validity of these factors had been indisputably demonstrated in the Great Patriotic War, but it is worth noting that in their ordering they represented a catalogue of Soviet vulnerability. Surprise attack was considered only transitory or secondary and could not, of itself, defeat an enemy. Surprise was quite mistakenly accorded considerable importance by imperialist commanders; but, as the USSR had shown in defeating the German invasion of 1941, it could not decide the outcome of a major conflict. Although surprise was recognised as significant in tactical operational and even strategic terms when exercised in accordance with the permanently operating factors,(16) the

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(15) Malcolm Mackintosh, Juggernaut. London: Secker and Warburg, 1967, p.277.

(16) Garthoff, How Russia Makes War, op. cit., pp.272-275. For an important commentary, see Col. I. Maryganov, Peredovoi Kharaktev Sovetskoi voennoi nauki. Moscow: Voenizdat, 1953, passim.

success of the powerful Soviet counter-offensive against the German Army allegedly established the ultimate futility of any strategy of surprise.(17) In addition to surprise, Stalin also judged as of only transitory significance such factors as superior mobilisation speed, experience in warfare, the transformation of the national economy to war production in peacetime, and climatic and topographical conditions.(18)

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(17) Garthoff, Soviet Strategy in the Nuclear Age, op. cit., pp.84-87; Michael Garder, A History of the Soviet Army. London: Pall Mall Press, 1966, p.134.

(18) Malcolm Mackintosh, Strategy and Tactics of Soviet Foreign Policy. London: Oxford University Press, 1962, p.91.

Combined Arms

Yet another strength of Soviet military science was its recognition of the 'combined-arms principle', the awareness that: '... success in war is not achieved by the one-sided development of one or the other weapon, but by the perfection of all arms and their skilful co-ordination'.(19) Victory would be achieved through the effective and complementary performance of all the armed services or 'types of troops' and weapons systems.

No single service would be considered the warwinning instrument in and or itself.(20)

In accordance with the combined arms principle, the Russians firmly condemned the single weapon fallacy or the view that any single combat force held the key to victory. Soviet military writing strongly attacked at least three western examples of the single weapon fallacy: the over-estimation of strategic air power; the much exaggerated significance attached to atomic weapons; and western over-confidence in the mobility and surprise effect of tank formations.(21)

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(19) Joseph L. Nogee, Soviet Policy Towards International Control of Atomic Energy. Notre Dame, Ind.: Notre Dame Press, 1961, p.12.

(20) Ibid.; Garthoff, How Russia Makes War, op. cit., pp.177-179.

(21) Ibid., pp.173-177.

Writing in 1949 on the place of aviation in imperialist doctrine, Marshal of Aviation Konstantin Vershinin argued:

> The rivival of Douhet's venturous ideas by Anglo-American warlords, mirrors their aspirations of conquest, not having reliable reserves or manpower at their disposal and searching for obedient cannon fodder in the Marshalised countries, the warmongers boom and exaggerate the role of the Air Force out of all proportion. (22)

In 1950, Colonel-General (later Marshal of Aviation) S. Rudenko discounted the 'pseudo-scientific theory that a war can be won by air bombing alone'. This theory, he explained, had 'proved itself worthless' in the Great Patriotic War.(23)

The growing American commitment to the atomic bomb was also regarded as another example of the 'single weapon' fallacy, the western search for a technical short-cut to victory. Writing of atomic weapons in 1946, Stalin said:

> I do not believe the atomic bomb to be as serious a force as certain politicians are inclined to regard it. Atomic bombs are intended to intimidate the weak nerved, but they cannot decide the outcome of a war since atomic weapons are by no means sufficient for this purpose. (24)

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(22) Garthoff, How Russia Makes War, op. cit., p.175.

(23) Ibid., p.349; This has been confirmed in an important recent Soviet study - see Col. I.V. Timokhovich, Operativnoe iskusstvo Sovetskikh VVS v Velikoi Otechestvennoi voine. Moscow: Voenizdat, 1976, esp. Ch.I and Ch.VI.

(24) Mackintosh, Juggernaut, op. cit., p.278.

Western theories on mobility and surprise of tank formations developed by Major-General J.F.C. Fuller, B.H. Liddell-Hart and Colonel General Heinz Guderian, were also denounced. In 1949, Major-General Isayev said, of western tank strategy:

> The last word in these modish capitalist theories was the German fascist offensive strategy and tactics of invasion armies, which sought to decide the issue of war by the operation of tank 'wedges', under-estimating the value of other forms and means of warfare, and under-estimating also the the role of strategic reserves in modern warfare. As we know, all these one-sided theories and vagaries of military thought resulted for the capitalist states only in bitter disillusionment and great catastrophies. (25)

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(25) Garthoff, How Russia Makes War, op. cit., p.175.

The 'Freeze'

As the only strategic doctrine which provided both a genuinely scientific insight into warfare and a guarantee of victory, 'Stalinist Military Science' was much more than officially admired or recommended. From 1947 until the Premier's death in 1953, it stood as the only permissible expression of strategic thought. The virtual ban on any reconsideration of declaratory doctrine, in effect, 'froze' the nation's strategy in its World War II mould, despite dramatic developments in post-war weapons technology, as well as highly significant changes in the post-war strategic environment.(26)

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(26) Garthoff, Soviet Strategy in the Nuclear Age, op. cit., pp.62-63; Also see J.M. Mackintosh, 'The Development of Soviet Military Doctrine since 1918' in Michael Howard, ed., The Theory and Practice of War. London: Cassell, 1965, pp.262-263; Roman Kolkowicz, The Soviet Army and the Communist Party: Institutions in Conflict. Santa Monica, Cal.: Rand Corporation, R-446-PR, August 1966, pp.189-191; Matthew P. Gallagher, The Soviet History of World War II, Myths, Memories and Realities. New York: F.A. Praeger, 1963, Chapters 1-4, pp.3-102, on historical issues and the wartime record, the post-war official line, the military and the interpretation of the war and professional historians and the war.

The Role of the Ground Forces

Although Soviet doctrine adhered to the combined arms principle it, nevertheless, stressed the role of ground forces. The decisive strategic mission was to be performed by a massive mobile and co-ordinated advance by infantry, artillery and tactical airpower.(27) Among the ground Army components the infantry was described as the key element and artillery as 'the main striking force' of the Army, acting in support of infantry and armoured operations.(28) Armoured forces were divided into 'tank divisions' and 'mechanised divisions'. The former were to storm through the enemy's heavy defence while the latter were to exploit the breakthrough achieved by tanks in pursuing the enemy.(29)

Official or declaratory strategic doctrine explained that the next great war would begin with a heavy air-atomic attack which would only accomplish a temporary paralysis of the victim's economy.(30) After the first great fusillade, the

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(27) It must be emphasised that there are immense difficulties in the way of compiling an accurate account of developments in the Ground Forces after 1946: even official sources dispose of sparse information. See Garthoff, How Russia Makes War, op. cit., p.174.

(28) Ibid., pp.299-307.

(29) Ibid., pp.308-315.

(30) Rear Admiral Ellis M. Zacharias, Behind Closed Doors. New York: G.P. Putnam, Sons, 1950, pp.203-204.

conflict would settle into a lengthy war of attrition dominated by ground forces. In the third and decisive phase, a 'strategic counter-offensive' would be launched, emphasising mobility and fire power in achieving the 'total annihilation of the exhausted and defeated army'.(31) This final phase would end with what was described as 'operational pursuit on a strategic scale' executed largely by jet aircraft and self-propelled rocket artillery.(32)

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(31) Zacharias, op. cit., pp.203-204.

(32) Ibid., pp.204-205.

Naval Doctrine

During much of the pre-war period Soviet naval strategists divided into so-called 'old' and 'young' schools of thought. The old school represented an offensive 'command of the seas' doctrine, relying upon heavy surface ships in an effort to control the seaward approaches to the Soviet Union.(33) In contrast, the young school regarded large surface ships as both burdensomely expensive and critically vulnerable to submarines. Rather than spend lavishly on an imitation of western surface fleets, the young school favoured a largely defensive strategy based upon submarines, MTBs, high speed destroyers and naval aviation.(34) After a lengthy period of young school dominance, Stalin began to move declaratory doctrine in the old school direction in the 1930s, calling for a large ocean-going fleet. In 1938 the Soviet President M.I. Kalinin declared that: 'The strongest socialist country must eclipse the strongest capitalist country - hence the Soviet Navy must overshadow the British Royal Navy'.(35) After

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(33) R.W. Herrick, Soviet Naval Strategy. Annapolis Md.: U.S. Naval Institute, 1968, pp.9-18.

(34) Ibid., pp.19-27; Also on the 'old school' - 'young school' controversy, see Donald C. Watt, 'Stalin's First Bid for Sea Power, 1933-1941', United States Naval Institute Proceedings, vol.90, No.6, June 1964, pp.88-96.

(35) Ibid., p.95; Garthoff, How Russia Makes War, op. cit., pp.174, 362, 365.

the Great Patriotic War in which the Navy played an uninspiring part, official doctrine again reflected Stalin's preference for large surface fleets. The Soviet Navy was at least eventually to become a major ocean-going force, and, as such, not only provide for the defence of the USSR, but also support socialist revolution around the globe.(36)

However, while calling for greatly expanded naval capabilities, declaratory doctrine also continued to describe the Navy as serving in support of ground Army operations.(37) Stalin characterised the Navy as 'the true helpers of The Red Army', while Rear Admiral V. Belli wrote that: 'War on the sea has historically never been an independent phenomenon, but always a part of a war as a whole'.(38) In its subordinate and defensive capacity, the Navy's major responsibility was not command of the seas, but, in the words of Admiral Isakov, 'to protect the strategic flanks of the Red Army extending to the coasts, against enemy landing parties and naval operations, and to direct its own blows against the enemy's flanks and

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(36) Donald W. Mitchell, A History of Russian and Soviet Sea Power. New York: Macmillan, 1974, pp.470-471.

(37) Ibid.

(38) See Admiral Belli in Voprosy Strategii ..., op. cit., pp.725-736 for essay on the naval mission and naval tasks: also Garthoff, How Russia Makes War, op. cit., p.362.

rear.[39] However, despite the apparently inferior doctrinal status of the Navy, the post-war Stalin period also recorded favourable analysis of the performance of navies in World War II - particularly that of the Soviet Navy - as well as assertions of an independent Soviet naval mission in a future conflict, a mission performed thousands of miles from Soviet territory in apparent contradiction of the view that the navy's exclusive responsibility was the close support of Army operations.[40]

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(39) Garthoff, How Russia Makes War, op. cit., p.365.

(40) Mitchell, op. cit., pp.469-471. There clearly were expressions of naval support for the deployment of a large 'balanced' ocean-going fleet which would be entrusted with important strategic responsibilities, much as described in 'old school' thinking before the war. An aspect of the post-war naval desire for powerful surface forces was reflected in the evidence - much of it retrospective - of support for the construction of aircraft carriers. In 1946 Admiral V.A. Alafuzov wrote: 'The conditions of modern war at sea demand the mandatory participation in the combat operations of navies of powerful carrier forces, using them for striking devastating blows against naval forces of the enemy as well as for the contest with his aviation. Both at sea and near one's bases these tasks can only be carried out by carrier aviation'; Herrick, op. cit., p.58; Also on the carrier issue, see Edward L. Barker, 'Soviet Naval Aviation', United States Naval Institute Proceedings, vol.187, No.1, January 1960, p.52; T.G. Martin, 'A Soviet Carrier on the Horizon', United States Naval Institute Proceedings, vol.96, No.12, December 1970, pp.47-51; T.W. Wolfe, Soviet Power and Europe, 1945-1970. Baltimore, Md.: Johns Hopkins Press, 1970, pp.46-47.

Role of Air Power

During the Second World War air power played, at most, a secondary part in both Soviet doctrine and combat experience. After the German surrender, the Air Force was directed to the history of the Great Patriotic War as the guide to the proper form of air doctrine. Stalinist doctrine continued to cast air power in a supplementary, although not unimportant, role in support of the ground forces.(41) In 1948, Colonel-General V. Sudets wrote:

> ... the training of air force units is planned so that they can, first of all, provide direct assistance to the ground forces in all types of operations. The development of all branches of the Soviet air force is carried out in accordance with this fundamental principle. (42)

Tactical aircraft, comprising most of the Soviet Union's stock of combat aircraft, were charged with the Air Force's major mission - assisting the rapid advance of the ground army, while elite air defence forces defended the Soviet Union itself.(43) Strategic aviation was also to strike deeply into enemy territory; but the western stress on the critical significance of long-range air strikes against the enemy's urban-industrial power base was firmly rejected.(44) Writing in 1949 in Military Thought

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(41) Garthoff, Soviet Strategy in the Nuclear Age, op. cit., p.170.

(42) Garthoff, How Russia Makes War, op. cit., p.325; See Timokhovich, op. cit.

(43) Garthoff, How Russia Makes War, op. cit., pp.356-358.

(44) Ibid., pp.343-350.

(Voennaya mysl) Colonel General (Aviation) Nikitin advised:

> Soviet military science holds alien any form of the one-sided theory widely prevalent in the capitalist countries which considers aviation as the most important factor of contemporary war, capable practically independently of deciding the contemporary war. Our military science recognises that victory in modern war is achieved by the combined efforts of all forms and arms of the armed forces, that no one arm can replace another, and that each of them must participate on the basis of able employment of all their characteristics and combat capabilities.
>
> On the basis of this deeply scientific principle, Soviet military science considers the outcome of war under contemporary conditions is decided on the field of battle by means of the annihilation of the armed forces of the enemy and that one of the most important tasks of aviation is active assistance to the ground and naval forces in all forms of their combat activity.
>
> This definition of the fundamental mission of aviation is not contradicted by the need to employ part of its forces to strike the deep rear of the enemy, on his military-industrial targets, but our military science does not consider such blows as an end in themselves, but only a helpful means of creating favourable conditions for the success of the combat operations of the ground and naval forces. The structure of our military air forces is established on the basis of the scientific definition of the role and significance of aviation in contemporary war. (45)

In short, the role of the Air Force within the context of

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(45) Garthoff, Soviet Strategy in the Nuclear Age, op. cit., pp.173-174.

the combined arms principle, was to be significant but only supplementary. Further, this supplementary function was to be largely performed on the basis of the World War II strategic pattern. Stalinist air doctrine, like the body of Stalinist military thought as a whole, assumed a rigid form in the post-war years, largely forbidding any readjustment to developments in modern weapons technology and continuing to enforce the model of the Great Patriotic War.(46) Nevertheless, the writings of several Soviet commanders in the post-war Stalin period, assessing the performance of strategic aviation during the Great Patriotic War and considering its future role in the light of modern technological developments, suggested that long-range air power had achieved a greater significance than it had ever before enjoyed within the still Army-dominated combined-arms concept.(47)

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(46) Garthoff, Soviet Strategy in the Nuclear Age, op. cit., pp.170-176; See Timokhovich, op. cit., ch.4, pp.241-260.

(47) For an official Soviet scenario for a Soviet-American war, see H.S. Dinerstein, War and the Soviet Union. New York: F.A. Praeger, 1962, p.174.

Stalinist Military Policy

The Role of the Ground Forces

In addition to declaratory strategic doctrine, the Stalinist conception of modern warfare was also reflected in operational doctrine or military policy. In harmony with the declaratory doctrine which cast the ground forces in the central strategic role, after World War II a demobilisation was carried out which reduced the size of the Army while improving its capabilities.(48) Demobilisation brought a decline in manpower levels, although the precise scope of that decline has been disputed.(49) Arms production was also cut and defence spending reduced.(50) However, the demobilisation was not a savage

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(48) Once again the great difficulty in examining the development of the Ground Forces after 1946 must be noted. See discussion on force structures and doctrine in a major essay by Major-General M. Cherednichenko, 'Razvitie teorii Strategicheskoi nastupatel'noi operatsii v 1945-1953 gg', Voenno-istoricheskii Zhurnal, 1976, No.8, pp.38-45; Also see Col. Louis B. Ely, The Red Army Today. Harrisburg, Penn.: The Military Services Publishing Co., 1953.

(49) On demobilisation, see V.N. Donchenko, 'Demobilizatsiya Sovetskoi Armii i veshenie problemy Kadrov v pervye poslevoennye gody', Istoriya SSR, 1973, No.3, pp.96-102 (see Tables). No other western source has figures of such validity.

(50) On arms production cuts, see Macintosh, op. cit., p.271; On defence spending see Abram Bergson, 'Russian Defence Spending', Foreign Affairs, vol.26, No.2, January 1948, pp.373-376.

assault on armed forces strength of the American type. In the Army's case, there was a selective reduction as part of a reorganisation programme lasting several years and conforming to Stalin's personal faith in the importance of large numbers of troops and weapons, his desire for increased divisional fire power and mobility, as well as the concept of defence in depth.(51) The Army reorganisation brought important changes in the administration of the armed forces generally and the Army in particular, as well as changes in force structure and improvements in equipment and weaponry.(52) The reorganised ground forces were deployed across the whole of the Soviet Union but were concentrated along its western approaches. The generally extended deployment revealed Stalin's commitment to a policy of active perimeter defence designed primarily to protect the huge Soviet continental land mass, a continental defensive emphasis which was also reflected in the character and deployment of the other armed services.(53)

The dominant position of the Army in both Stalinist declaratory and operational planning was in part, the result

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(51) See under Ground Forces in 50 let vooruzhennykh sil SSSR. Moscow: Voenizdat, 1968, ch.11, pp.506-511.

(52) Ibid.

(53) Roman Kolkowicz, The Soviet Union and Arms Control. Baltimore: Johns Hopkins Press, 1970, p.25.

of professional military judgement and experience as well as geopolitical factors. However, the heavy stress on ground forces was also the product of the USSR's limited strategic alternatives. The Soviet Union, confronted by an adversary of enormous industrial strength, armed with an alarming new weapon and, as the Soviet naval command emphasised (and still does), representing a major maritime coalition, was unable to deploy any strategic counterweight against the USA other than a large ground army appearing to threaten the invasion of western Europe (a 'hostage Europe' strategy) in response to an American atomic attack.(54)

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(54) Mackintosh, op. cit., pp.270-271; Wolfe, op. cit., pp.32-35; Marshal D. Shulman, Stalin's Foreign Policy Re-appraised. Cambridge Mass.: Harvard University Press, 1963; William Shelton, Soviet Space Exploration. New York: Washington Square Press, 1966, pp.37-38, quotes the Director of the Nuclear Energy Centre at Novosibirsk, Dr. Gersh Budker, as saying of early post-war Soviet policy: 'We didn't have the A-bomb than and were afraid of you. We have had a long history of people coming to get us and we were nervous about your big bomb. So we put a lot of troops on the new European border. It was a show of bodies and force, but it covered up for us. We bluffed it'.

Role of Naval Power

The primary role of the Soviet Navy in this period, with most of its manpower assigned to coastal defence and land-based fortifications, was clearly the protection of the ground Army's seaward flank.(55) Despite Stalin's 'Old School' preference and pronouncements, and a vigorous programme of naval construction, the USSR was unable to deploy an ocean-going Navy or to develop a new operational doctrine dealing with the command of such a force either before or after World War II.(56)

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(55) Hanson W. Baldwin, 'The Soviet Navy', Foreign Affairs, vol.33, No.4, July 1955, p.601.

(56) See Boevoi put' Sovetskogo voennomorskogo flota. Moscow: Voenizdat, 1974 (3rd Edn.), Ch.XII. See also Admiral of the Fleet S.G. Gorshkov, Morskaya moshch' gosudavstva. Moscow: Voenizdat, 1976, Ch.III for post-war developments. See also Morskoi Sbornik. On the strength of Stalin's Navy and the intensive surface and subsurface construction programme, see Robert F. Kerner, 'Russian Naval Aims', Foreign Affairs, vol.24, No.2, January 1946, pp.290-299; Frank Uhlig, Jnr., 'The Threat of the Soviet Navy', Foreign Affairs, vol.30, No.3, April 1952, pp.444-454; Rudolf Lusar, 'The Red Fleet is being Built Up', United States Naval Institute Proceedings, vol.80, No.1, January 1954, pp.57-66; Barker, op. cit., pp.51-59; David Woodward, The Russians at Sea. London: William Kimber, 1965; Michael MccGwire, 'Soviet Naval Capabilities and Intentions' in The Soviet Union in Europe and the Near East: Her Capabilities and Intentions. London: RUSI, 1970; and by the same author, 'Soviet Naval Procurement', Ibid.; On the post-war acquisition of Axis ships, see Lt. T.V. Tuleja, USNR, 'The Historic Pattern of Russian Naval Policy', United States Naval Institute Proceedings, vol.77, No.9, September 1951, pp.959-967.

Regardless of the support which may have genuinely existed for a large surface fleet and the old school quality of declaratory doctrine, the policy actually implemented apparently included a blend of 'young school' doctrinal elements, with the 'fortress fleet' and 'fleet-in-being' strategies. The 'fortress fleet' concept involved a fixed passive defence intended to resist an amphibious invasion with coastal artillery, anti-aircraft installations, naval infantry, short-based aviation and coastal patrol craft. 'Fleet-in-being' referred to a more free ranging force operating almost independently of coastal support installations, a force largely to be composed of a destroyer leader and cruisers under construction. These ships were initially to protect Soviet coastal areas but were eventually to implement an 'old school' strategy.(57) Until such time as the Navy shifted to an ocean-going posture, its main task was largely coastal defence. In so far as any more ambitious 'command

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(57) Herrick, op. cit., pp.60-61; Richard A. Shafter, 'A New Red Naval Doctrine in the Making?', United States Naval Institute Proceedings, vol.78, No.10, October, 1952, pp.1091-1098, discusses the 'fortress fleet' - 'fleet-in-being' concepts, quoting Captain Alfred T. Mahan to the effect that they represent: 'the antipodes of each other. They represent naval or military thought polarised ...'.

of the 'seas' or ocean-going objectives concerned the Russians, it was only to establish control of the seaward approaches to the USSR. Further, this mission was not to be accomplished by warships alone, but was also to be greatly assisted by land-based air power and other on-shore elements.(58) However, in addition to coastal defence, the heavy post-war investment in submarine construction reflected the assignment of a new operational role to the Soviet Navy, namely the interdiction of western sea communications across the Atlantic. The wartime force of some 220 submarines was improved and expanded, providing the Russians with more than 300 submarines by 1953 to carry out this important new mission.(59)

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(58) Baldwin, op. cit., pp.601-602.

(59) Wolfe, op. cit., pp.45-46; Also on submarine strength, see T.V. Tuleja, op. cit.; F. Uhlig, Jr., op. cit.

Role of Air Power

Like the Soviet Navy, the major strategic role of the Air Force was to assist ground Army operations, largely performing tactical missions in support of the Army's rapid thrust into Europe. The post-war demobilisation reduced aircraft production from 40,000 to 10,000 a year; but combat strength remained largely unchanged and the Air Force retained its status as second in size only to that of the United States.(60) More than 75% of its combat aircraft were stationed in the western regions of the USSR and central Europe.(61) Much of the total force was assigned to close support operations for the ground forces, eliminating enemy bases beyond the Army's grasp, conducting reconnaissance and tactical interdiction. As well as tactical support of the ground Army's offensive, the Air Force was also to perform a vital and newly intensified air defence mission. The air defence forces (PVO) underwent extensive improvement after the war, with the rapid development of several new varieties

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(60) Marshal of Aviation S.A. Krasovskii, (ed.), Aviatsiya i kosmonavtika SSR. Moscow: Voenizdat, 1968, Ch.V for post-war developments. For a journalistic and highly melodramatic survey see Robert Jackson, The Red Falcons. London: Clifton Brodie, 1970, p.164.

(61) Ibid.

of interception aircraft, the deployment of anti-aircraft artillery and an attempt to construct the most effective visual and radar warning system possible.(62) Nevertheless, despite a concentration on defensive capabilities, the air defence system in this period remained inadequate. Aircraft were not yet available in the required numbers or quality. Further, in the absence of sufficient ground control interceptor facilities, a shortage of all-weather aircraft, bad

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(62) The highly successful post-war R & D programme designed to develop interceptor aircraft - greatly assisted by German and British technology - produced several new aircraft types, including the twin turbo-jet MiG-9, (Willian Green, 'The Development of Jet Fighters and Fighter Bombers', in Asher Lee, ed., Soviet Air and Rocket Forces, p.135), the Yak-15, the first Soviet jet fighter, the succeeding Yak-17, (Jackson, op. cit., pp.162-163); The LA-15 and Yak-23, lightweight fighters, (Green, op. cit., pp.137-138) and the MiG-15, which was to supersede the LA-15 and Yak-23 (Ibid., p.138). Beginning from a position of marked inferiority at the end of World War II, by the early 1950s, the fighter development programme had raised the quality of Soviet fighter technology to a level of equality with that of the west (Asher Lee, 'Strategic Air Defence', in Asher Lee, ed., op. cit., p.120). The inventory of Soviet tactical aircraft also included the piston-engined TU-2 bomber, followed by the twin-jet IL-28 (Asher Lee, The Soviet Air Force. London: Duckworth, 1961, pp.167-168).

weather training and an effective national radar warning network, the Soviet Air Force was to remain capable of only good visibility operations in the early 1950s.(63)

Strategic aviation throughout Stalin's post-war leadership retained the distinctly subordinate position in Soviet doctrine and policy which it had held during the war. However, there were public expressions of support for an improvement in its status.(64) There was also a vigorous effort to develop a long-range bomber, improve navigation, flying and bombing skills, construct air bases and simulate attacks on U.S. cities.(65)

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(63) Wolfe, op. cit., pp.47-49.

(64) For example, departing somewhat from orthodox strategic air doctrine in 1946, Major General of Aviation Tartarchenko wrote: 'It would appear that contemporary air forces are capable of deciding not only tactical but also operational and strategic tasks which no arm other than aviation can fulfil ... in future engagements the place of application of the main force will be not so much the front as the rear of the enemy'. (R.L. Garthoff, Soviet Strategy in the Nuclear Age, op. cit., p.171); also in the support for revision in strategic air doctrine, see Asher Lee, The Soviet Air Force, op. cit., pp.196-197; On the effort to develop a strategic bomber, see below pp.156-159.

(65) J.R. Shepley and C. Blair, Jn., The Hydrogen Bomb, New York: David McKay, 1954, p.199.

In 1953 the US Air Force Chief of Staff, General Nathan Twining astimated that the Soviet Union commanded about 1,000 obsolescent TU-4 non-jet medium range bombers.(66) However, with its 350 mile per hour speed and 4,000 mile range, the TU-4 would have been unable to elude American jet interceptors or to hit US cities and return to base.(67) The Russians were also still without an air refuelling capability.(68) In short, the programme of strategic aviation R & D while significant, did not signal any revision in strategic air doctrine, nor did it succeed in providing an Air Force of genuinely strategic capabilities until after Stalin's death. It did succeed in demonstrating to the world that a potent strategic bomber force was within the USSR's grasp.(69)

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(66) Air Chief Marshal Sir Philip Joubert, 'Long-Range Air Attack' in Asher Lee, ed., Soviet Air and Rocket Forces, op. cit., p.108.

(67) Shepley and Blair, op. cit., p.202.

(68) A.R. Horelick and M. Rush, Strategic Power and Soviet Foreign Policy. Chicago: University of Chicago Press, pp.17-18.

(69) Ibid., p.18. Also on Stalin's Air Force, see Robert A. Kilmarx, A History of Soviet Air Power. London: Faber and Faber, 1962.

East European Rearmament

While improving the strength of Soviet general purpose forces, Stalin also pursued a programme of military assistance to the USSR's European allies from 1949 to 1953. By 1948 the Soviet Union had concluded bilateral defence treaties with the countries of eastern Europe. In 1949 these nations began a process of military improvement and reorganisation on the Soviet model.(70) The officer corps in each case was relieved of those men unsuitable for professional or ideological reasons and re-staffed with more acceptable native personnel or by Soviet officers.(71) Further, large quantities of Soviet equipment in service with Russian troops were delivered to the various national forces. By the time of Stalin's death, the USSR's socialist allies in Europe supported about 1,500,000 men in uniform, organised into some sixty-five to eighty divisions, less than half of which were judged to be combat ready in some degree.(72) East European air power was also attended to, with the primary emphasis on the construction of airfields available to the USSR's own aircraft, as well as the emplacement of an air defence warning system. It was not until after the Korean War

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(70) The basic reference in this context is Zarozhdenie narodnykh armii stranuchastnits Vakshavskogo Dogovora 1941-1949 gg. Moscow: Nauka, 1975, passim. See also Wolfe, op. cit., p.42.

(71) The basic study on non-Soviet officer corps is still Ithiel de Sola Pool, Satellite Generals. A study of Military Elites in the Soviet Sphere, Hoover Institute Studies, 1955, passim: See also under national entries (eg. Hungary).

(72) Wolfe, op. cit., p.43.

that a major effort began to improve east European air forces and to integrate their strength with that of the Soviet Union.(73)

While the Russians did not manage to accomplish entirely the revival of eastern European armed forces or their full integration into a broad structure of Soviet bloc defences before Stalin's death, they did establish a large supplementary force, impressive at least in quantitative terms and significant as the basis for future co-operation and standardisation of all socialist forces in Europe.(74)

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(73) Wolfe, op. cit., p.43.

(74) Ibid., p.44; For a general study of east European rearmament, see (collective authorship) Zarozhdenie narodnykh armii stran-uchastnits Varshavskogo Dogovora 1941-1949 gg. Moscow: Nauka, 1975. For a case study of the rearmament of Czech forces in particular see M. Nejedly, 'K nekterym otazkam budovani Čs lidové armády v duchu sovětske vědy v letech 1948-1950', Historie a vojenstvi, No.4, 1963, pp.545-576.

Weapons Research and Development

The principles of declaratory doctrine and the provisions of operational strategy do not account for the whole of Soviet strategic development at this time. There is also the key question of military research and development and the problem of the relationship between advanced military technology - or an advancing technology - and the ossification of 'doctrine'. This problem is of particular interest in those areas of intensive R and D activity which appear to conflict with declaratory doctrine in its emphasis on conventional European ground war and the World War II strategic model.

Atomic Weapons

Soviet atomic research began as early as the 1920s, with many of its earliest researchers - such as Peter Kapitsa and V.I. Vernadsky - returning to Russia after study in the west.(75) Vernadsky returned from the Curie Radium Institute in Paris to found the USSR's State Radium Institute in 1922.(76) In 1930 A.F. Ioffe conducted atomic research in the Physical-Technical Institute in Leningrad, as programmes also proceeded in Moscow and Kharkov.(77) Seven years later, Soviet scientists produced

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(75) Whiting, op. cit., p.91.

(76) Ibid., p.92.

(77) Ibid.

Europe's first cyclotron. In 1940, a Sepcial Committee on the Uranium Problem was established.(78) Atomic research before the war was not only remarkable for its scientific quality but also for the open and unclassified atmosphere in which it progressed, suffering very little, if any, political interference.(79)

In 1941, the R & D effort was, of course, badly crippled by the German invasion. Nevertheless, despite the difficult circumstances it was during the war that the Soviet Union was first committed to an atomic weapons programme. The precise date of the commitment is not clear.(80) Soviet physicist, Igor N. Golovin, set the date at 1942, with an acceleration ordered after the first American bomb test on July 16, 1945.(81) Igor V. Kurchatov reported that Soviet Physicists were developing atomic weapons during the war.(82) Speaking of the American atomic capability in November of 1945, Foreign Minister Molotov advised: '... it is not possible at the present time for a technical secret of any great size to remain the exclusive possession of some one country or some narrow arch of countries'.(83)

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(78) Whiting, op. cit., p.92

(79) Kilmarx, op. cit., p.218

(80) It should be noted that biographical studies of Academician Kurchatov place the origins of the Soviet military-nuclear programme in the period 1942-1943: See P.T. Astashenkov, Akademik I.V. Kurchatov. Moscow: Voenizdat, 1971, pp.190-204.

(81) Wolfe, op. cit., fn.7, pp.35-36.

(82) Whiting, op. cit., p.93.

(83) Nogee, op. cit., p.15.

He pledged that: 'We shall make up properly for all lost time and shall see to it that our country shall flourish. We shall have atomic energy and many other things too'.(84) Stalin is said to have ordered an accelerated campaign for atomic weapons development a few days after the American attack on Hiroshima.(85) In any case, the Russians were certainly engaged in serious atomic weapons research by 1945.

In a February 1946 speech, as if hinting at the USSR's new weapons research effort, Stalin subtly promised to end the US atomic monopoly. The premier said:

> ... special attention will be devoted to ... the widespread construction of all manner of scientific research institutions that can give science the opportunity to develop its potentialities. I have no doubt that, if we give our scientists proper assistance, they will be able, in the near future, not only to overtake, but to surpass the achievements of science beyond the boundaries of our country. (86)

In September of 1947, G.M. Malenkov advised that: 'We have set ourselves the task not only of catching up with the scientific achievements abroad, but of surpassing them'. Colonel G.A. Tokaev, a member of a special 1947 commission on aviation and rocket plane research, quotes the commission's president, Colonel-General Serov, as saying: 'Don't worry. There can hardly be another war before 1950 or 1951, and by

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(84) Nogee, op. cit., p.15.

(85) Ian Grey, The First Fifty Years. New York: Coward-McCann, 1967, pp.412-413.

(86) Shulman, op. cit., p.24.

that time we shall have atomic bombs - and better ones - than the Americans'.[87] Milovan Djilas recalled Stalin as having said of the atomic bomb in January of 1948: 'That is a powerful thing, powerful'. Djilas remembers, 'His expression was full of admiration, so that one was given to understand that he would not rest until he, too, had the "powerful thing"'.[88]

With the firm support of the leadership, the Russians themselves claim that their first graphite reactor, constructed under the leadership of I.V. Kurchatov, went into operation in December of 1946, a development estimated by Arnold Kramish as having occurred in the autumn of 1947.[89] With a reactor in service, one of the greatest problems had been solved.[90] Robert Kilmarx explains that:

> After 1947 the programme moved into high gear as uranium ore extraction was increased; reactor development for the production of plutonium was accelerated; uranium isotope separation by the gasseous diffusion method was initiated and a larger accelerator construction programme was developed. Significant increases were also made in research facilities (particularly under the Academy of Science) and in nuclear weapons testing and production. (91)

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(87) Col. G.A. Tokaev, Stalin Means War. London: Weidenfeld and Nicolson, 1951, p.123.

(88) Shulman, op. cit., p.21.

(89) Wolfe, op. cit., fn.7, pp.35-36.

(90) Whiting, op. cit., p.93.

(91) Kilmarx, op. cit., p.226.

The efforts of Soviet scientists were rewarded in 1949 when the Russians surprised the world with their first atomic explosion.(92) Progress continued in the early 1950s, bringing the detonation of the USSR's first air-dropped hydrogen bomb in 1953, some time before the date predicted by American experts and before the United States had itself exploded an air-dropped weapon. With the end of 1953, the Russians had seven nuclear explosions to their credit and seven more by October of 1954. Overall, between 1949 and

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(92) The USSR in the late 1940s commanded sufficient scientific knowledge and resources to develop atomic weapons without foreign assistance. However, the Russians could not call upon the magnitude of economic and industrial strength to support an intensive research programme of the American type. To speed the development process, they therefore, supplemented their scientific inquiries with a considerable intelligence effort. (Lansing Lamont, Day of Trinity. New York: Atheneum, 1965, p.282). A Canadian Royal Commission in 1946 uncovered a widespread Russian intelligence campaign in North America which, after 1945, had emphasised the collection of atomic secrets. (J.N. Westwood, Russia 1917-1964. Harper and Row, 1966, p.144).

While the Soviet Union would have produced atomic bombs without any such espionage programme, it has been estimated that the information gathered abroad reduced the time needed to detonate the first weapon by as much as three years. (Lamont, op. cit., p.282).

1959 fifty to sixty nuclear devices and weapons were tested.(93)

From the quantity of resources, committed, and the pace of the research effort undertaken, it is clear that, despite the tone of the declaratory position on the new weapons technology, Stalin strongly supported an intensive programme of atomic weapons development.

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(93) Kilmarx, op. cit., p.258.

Missiles and Missile Research

In addition to the rapid development of atomic weapons, there was also an intensive effort in Stalin's later years to produce military rocket and long-range missile delivery systems. With a long standing interest in massed artillery, the Russians have been concerned with the military applications of rocketry for many years. They developed a group of scientists familiar with the field before the Second World War, operating a military rocket research programme in the 1930s.(94) While nearly all available resources had to be devoted to resisting the German attack, before the end of the Great Patriotic War the Soviet government resumed rocket research.(95) During the war the Russians introduced the Stalin Organ, a launcher with sixteen to sixty Katyushka rockets, each with a three to six mile range.(96) By 1943 a rocket-propelled penetration bomb was available for launch from Stormovik fighters.(97) Speaking of far more advanced weapons, Stalin reportedly spoke to a meeting of the Politbureau and the Council of Ministers in 1947, asking:

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(94) Andrew S. Haley, Rocketry and Space Exploration. Princeton: Van Nostrand, 1958, p.94.

(95) Shulman, op. cit., pp.24-25.

(96) Haley, op. cit., p.94.

(97) Haley, Ibid., p.94.

> Do you realise the tremendous strategic importance of machines of this sort? They could be an effective straight-jacket for that noisy shopkeeper Harry Truman. We must go ahead with it, comrades. The problem of the creation of transatlantic rockets is of extreme importance to us. (98)

Reflecting the importance of long-range rockets, an intensive effort was made to benefit from German experience in the field, first as a further development of artillery, but later as a vital part of strategic warfare.(99) After the war, the Russians attempted to reconstruct German rocket production facilities, rebuilding the rocket research centre at Peenemuende, as well as other missile and aircraft engine installations.(100) Technical 'talent scouts' searched Germany for scientists, attempting to convince those in the western occupation zones to enlist in the service of Soviet research.

In October of 1946 all available scientists in the Soviet zone were transported to the USSR.(101) Dr. G.A. Tokaty, chief Soviet rocket scientist in occupied Germany, recalls

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(98) Dr. G.A. Tokaty, 'Soviet Rocket Technology' in E.M. Emme, ed., The History of Rocket Technology. Detroit: Wayne State University Press, 1964, pp.280-281.

(99) Kilmarx, op. cit., p.223.

(100) Asher Lee and R.E. Stockwell, 'Soviet Missiles' in Asher Lee, ed., The Soviet Rocket and Missile Forces, op. cit., pp.148-149.

(101) Ibid.

Stalin's great displeasure at being unable to acquire any of the leading V-2 or other rocket engineers and administrators, nor a complete German rocket factory organisation. Instead, the Russians were able only to piece together ruined German research facilities, shipping laboratories and workshops to the USSR.(102)

Dr. Walter Dornburgher, commanding general at Peenemunde explained that at the end of the war the United States and the Soviet Union were approximately equal in the quality of their rocket technology but, thereafter, their respective programmes evolved differently. Dornburgher described American research as employing the advances of German knowledge in a broad pattern of long term weapons development, whereas the Russians operated under a 'do it as soon as possible' approach.(103)

After Germany's defeat, top priority was assigned to rocket research behind a wall of heavy security.(104) Between the years 1947-1953 missiles were not publicly discussed, despite the intensive work underway on their development.(105) Post-war research, while fairly comprehensive, early stressed ballistic missiles.(106) Within that field work on surface-to-

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(102) Tokaty, 'Soviet Rocket Technology' in Emme, op. cit., p.279.

(103) Lee and Stockwell, op. cit., p.153.

(104) Haley, op. cit., p.123.

(105) Garthoff, Soviet Strategy in the Nuclear Age, op. cit., p.225.

(106) Ibid., p.232.

surface ballistic missiles was considered the project of over-riding importance, the first priority being the acquisition of a few V-2(A-4) weapons as the basis for the later development of long range missiles.(107) Work also proceeded on increasing the range, payload and reliability of the V-2 type with the aim of rapidly beginning the production of missiles of medium and intercontinental range.(108) Further, an ICBM project may have begun as early as 1948.(109)

Certainly the Russians were very far from satisfied with the capabilities of the V-2. In the autumn of 1946, Air Force Marshal Zhigarev said:

> We must admit that our V-2 type rockets do not satisfy our long term needs, they were good to frighten England, but should there be an American-Soviet war, they would be useless; what we really need are long range, reliable rockets capable of hitting target areas on the American continent. This is an aim that should dominate the mind and efforts of your (Dr. G.A. Tokaty's) rocket group. (110)

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(107) Kilmarx, op. cit., p.233.

(108) Ibid., pp.233-234.

(109) Ibid., p.234.

(110) Tokaty, 'Soviet Rocket Technology' in Emme, op. cit., p.280.

On March 14, 1947, G.M. Malenkov reportedly told a Kremlin meeting of aircraft and rocket designers:

> No comrades; I am not happy with our V-2s; we cannot rely on such a primitive weapon; besides, should there be another war, it would be a war, not against Poland; our strategic needs are predetermined by the fact that our potential enemy is to be found thousands of miles away. (111)

According to Dr. Tokaty, with German help, V-2 production was fully restored during 1945-46.(112) The levels of V-2 output at Peenemunde in 1944 were equalled by the Russians between 1946 and 1947. By the period 1949-1950, Tokaty claims levels far exceeding Peenemunde's performance in both quantity and quality.(113) By 1949, he asserts that the achievement of full serial production of a large single stage rocket, a much improved V-2 described as the 'Pobeda' or T-1 type, with a maximum range of some 500 miles.(114)

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(111) Tokaty's 'Soviet Rocket Technology' in Emme, op. cit., p.220.

(112) Ibid., p.279.

(113) Ibid., p.280; The first test of a ballistic missile, labelled the R-1 is reported to have taken place in October 1947, with an improved version, the R-2, tested in 1950, P.E. Efimov (Col.Gen.), ed., Boevoi Soyuz Bratskikh Armii. Moscow: Voenizdat, 1974, p.212.

(114) Tokaty, 'Soviet Rocket Technology' in Emme, op. cit., pp.279-280.

The years 1951 and 1952 brought further reports of an improved V-2 produced in large numbers.(115) Far from satisfied with the T-1's inadequate range, a programme for its immediate improvement was begun. Experiments on a winged version increased the range to 990 miles, but, as this too was far short of the mark, work began on a weapon of more advanced design, the T-2, first test-fired in the late 1940s. A two-stage rocket, it had a range estimated at from 1,200 to 1,500 miles. In any case, it looked to be a genuine intermediate range ballistic missile.(116)

Several test-firings of an IRBM type were conducted in 1954 and 1955, likely including the last T-2 tests.(117)

While T-2 marked a quite respectable achievement, it was also unsatisfactory for use against North American targets. Nevertheless, it provided the basis for a missile of the highly desirable intercontinental range, the three-stage T-3, on which work may have begun as early as 1948.(118)

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(115) Lee and Stockwell, op. cit., p.150.

(116) Ibid., p.154.

(117) Ibid., p.150.

(118) Ibid., p.154.

As well as the T-3, the Russians were also attempting to perfect a boost-glide rocket powered vehicle. This weapon, theoretically, could have served as a high-altitude bomber. Based upon the German 'Saenger concept', it was designed to reach an altitude of 162 miles and, by skipping along the layers of the atmosphere near the Earth's surface, fly up to 10,000 miles without landing or refuelling in flight.(119)

In addition to ground launched weapons, research was also conducted into the possibility of launching missiles from submarines. It has been reported that in 1945 the judgement was made that the submarine offered the most suitable launcher for the delivery of the USSR's future atomic weapons on North American targets. The warhead was allegedly to be delivered by a torpedo detonating a shallow waterburst.(120) However, regardless of the accuracy of these reports, the Soviet occupation of Germany offered the Russians an alternative submarine launching system - a 100ft. German submersible launching platform or canister, designed to fire a V-2 rocket from a gyro-stabilised platform. Under the German plan, three such 500-ton canisters were to be towed by a single submarine.(121)

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(119) Kilmarx, op. cit., p.234.

(120) McCGwire, op. cit., p.84.

(121) Lee and Stockwell, op. cit., p.151.

The Russians also acquired German plans for an improved version of this early submarine missile system, tentatively labelled the V-3.(122) In the Soviet adaptation of the V-3 system, the Z-class submarine was chosen as the launch vehicle. In 1947-1948, it was reportedly decided to develop a nuclear submarine, with diesel Z-class remaining the interim launcher for a missile with a 350n.m. range - the Z V-class SSB. In 1949-1950, the decision was made to install three Z V-class SSBs on board each Z-class submarine. The first test-firing took place in 1955.(123)

The vigorous effort to develop long-range missiles, which could only be of great significance in the US-Soviet strategic relationship, when joined with atomic warheads accounts for another instance of apparent conflict between a doctrinal orthodoxy stressing European ground war and conventional weapons and the post-war programme of military R & D.(124)

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(122) Albert Parry, Russia's Rockets and Missiles. London: Macmillan, 1960, p.153.

(123) MccGwire, op. cit., p.84.

(124) Also on Soviet rocket and missile development, see Col. G.A. Tokaev (Tokaty), Stalin Means War. London: Weidenfeld and Nicolson, 1951; Soviet Space Programmes: Organisation, Plans, Goals and International Implications. U.S. Government Printing Office: Staff Report prepared for the use of the Committee on Aeronautical and Space Sciences, U.S. Senate, 87th Congress, 2nd Session, May 31, 1962; Michael Stoiko, Soviet Rocketry: The First Decade of Achievement. Newton Abbot; David and Charles, 1970.

Strategic Aviation

In addition to atomic and missile research, the effort to develop a strategic bomber marked a third major research programme which could be regarded as conflicting in some degree with a declaratory doctrine which strongly emphasised conventional ground war in the European theatre. During World War II the American B-25 twin-engine bomber served as the Soviet strategic aircraft. In April of 1944, Stalin requested 500 US four-engine Liberators and B-17s. While this request was never granted, the Russians did acquire the B-17 and B-27 in 1943 and 1944. However, as these aircraft were unable to reach North American targets they were not placed in production.(125) In 1944 a suitable model for strategic bomber production finally came into Russian hands when four B-29A aircraft crash-landed in Siberia.(126) The senior Soviet air force official, Marshal Konstantin Vershinin ordered that a Soviet prototype of these aircraft be produced.(127)

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(125) Kilmarx, op. cit., p.209. It should be noted that there is no complete history of the Soviet Air Force. An unpublished work by Alexander Boyd, History of Soviet Air Power, is to be published by Macdonalds at the end of 1976.

(126) Garthoff, Soviet Strategy in the Nuclear Age, op. cit., p.177; On the B-29 crash and its consequences, also see 'The Billion Dollar Bomber', parts 1 and 2, Air Enthusiast, vol.1, Nos. 2 and 3, July and August, 1971.

(127) Shepley and Blair, op. cit., p.198.

In only one year A.N. Tupolev turned out a modified B-29, labelled the TU-4, and drew the blueprints for its mass production.(128) By 1948, it was in mass production and the first deliveries were made to long-range aviation.(129) Although TU-4 production represented a remarkable achievement, the TU-4 was only a medium-range bomber, with a maximum radius of action of less than 1,500 miles.(130)

By the time of the Korean War in the summer of 1950, the USSR was still without a long-range bomber capable of striking US targets.(131) The Soviet Air Force retained its continental or European orientation.(132) It was unable to endanger the United States itself and posed only a secondary threat to Europe with ageing propeller driven bombers.(133) The inability to develop a heavy jet bomber by 1950, or soon thereafter, stemmed primarily from the difficulty of producing

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(128) Shepley and Blair, op. cit., p.198.

(129) Kilmarx, op. cit., p.230.

(130) Philip Joubert, 'Long-Range Air Attack', in Asher Lee, ed., Soviet Air and Rocket Forces, p.107.

(131) Ibid.

(132) Wolfe, op. cit., pp.40-42.

(133) Joubert, Ibid., p.108.

a jet engine of sufficient power.(134)

After the Korean War a number of improvements were, nevertheless, achieved in long-range aviation which was now made to more closely resemble America's Strategic Air Command. Navigation and bombing skills were improved; ever longer cross-country and over-water flights were made; large formation flights were practised; in-flight refuelling was studied; bombing attacks on US cities were simulated; air bases were built and, by 1955, 700 TU-4s were in service.(135) Further, the propulsion problem was greatly eased by the development of a co-axial jet engine design with over 10,000 lbs. of static thrust. In 1954 engines capable of 15,000 lbs. of thrust - as powerful as any in the world - were being built.(136) In the same year, the Russians succeeded in producing the Badger a twin-turbojet medium bomber and two heavy intercontinental bombers, the four-turbojet Bison and the multi-turbojet Bear. The USSR was also developing a fleet of in-flight refuelling aircraft, adding new long-range airfields and improving aircraft dispersal in the Arctic region.(137)

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(134) Joubert, op. cit., p.108.

(135) Shepley and Blair, op. cit., p.199.

(136) Joubert, op. cit., p.108.

(137) Ibid., p.109.

The Badger was a turbojet design with a 1,500 mile radius of action and a maximum speed of 600 to 625 miles per hour. The Bear had four jet turboprop power units, with a 12,000 lb. shaft horse power in each engine, a radius of action of over 4,000 miles, a maximum bomb load of ten tons and a top speed of 500 m.p.h. The Bear was the first Russian bomber with North American range and aerial refuelling capability. It was in service at the beginning of 1954, but its turboprop engines were unable to reach supersonic or high subsonic speeds.(138) The four turbojet Bison was the fastest of the long-range jet bombers and was to roll off the production line at the rate of fiteeen to twenty per month from 1955 onward.(139)

The apparent urgency of the post-war R & D programme of bomber development which was to provide the USSR with an air-borne intercontinental strike capability after Stalin's death marked a third major research undertaking which was not entirely compatible with a declaratory doctrine which described the bombing of an enemy's urban-industrial areas as, at most, a secondary and indecisive mission.

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(138) Joubert, op. cit., p.110.

(139) Ibid.

Role of Action-Reaction in the Development of Stalinist Strategic Doctrine

Evidence of Reaction

The post-war future of the Soviet Union's wartime strategic doctrine was assured by its adoption as Stalin's personal strategic creed. By 1947 the doctrine and experience of the war were established as timeless and unquestionable strategic truth. In such circumstances, the USSR was poorly placed for sensitive reaction to American actions. However, despite the rigidity of Stalinist strategic doctrine and its calcifying influence on operational planning, there is evidence of some degree of Soviet responsiveness to American actions and developments.

Adversary Perception

The sheer proportions of American power and potential, as well as the course of US foreign policy after the war, all but ensured an early and fundamental political 'reaction' in the Soviet identification of the United States as a major adversary whose opposing interests and formidable capabilities demanded the maintenance of substantial Soviet military forces. The United States emerged from the Second World War with tremendous economic power. In addition to industrial strength, she commanded a large ocean-going navy, a force of relatively long-

range aircraft and an entirely new weapons technology of unparalled destructiveness. America also clearly demonstrated her opposition to the spread of Soviet influence by the adoption of a foreign policy of Containment. This policy was implemented in Europe by economic and military aid to anti-Communist elements in Greece and Turkey and the gathering of much of western Europe into an anti-Soviet alliance in 1949. These developments, added to the USSR's ideological perspective, were more than adequate to cast the United States in the role of a dangerous adversary.(140)

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(140) Isaac Deutscher in Stalin. London: Oxford University Press, 1967, pp.583-585, argues that the American atomic monopoly and the Truman doctrine of economic aid to the anti-Communist cause generated the post-war Soviet build-up in conventional forces which, in turn, fuelled or refuelled the American adversary perception.

- The 'Hostage Europe' Strategy

Evidence of Soviet 'reaction' to the United States in this period also appeared in the so-called 'hostage Europe' strategy. During the late 1940s the Russians were faced by a rival whose atomic capability they would be unable to equal for several years. The military-political threat implicit in this alarming American advantage probably prompted a desire for some variety of Soviet countermeasure, both to provide for the physical security of the USSR as well as to ensure against any US attempt to exploit its unique strategic capability in political terms. The establishment of large Soviet general purpose forces on the frontiers of western Europe cannot be explained as solely a response to the atomic bomb. Nevertheless, the apparent holding of Europe 'hostage' was likely encouraged by the American atomic monopoly and represented an attempt to 'react' to the American 'threat' as effectively as possible in difficult circumstances. Much as the Americans were driven to 'react' to the USSR with atomic weapons by an unwillingness, or a practical political inability, to respond in any other fashion, the Russians were compelled by their economic and technological limitations to 'react' to the USA by deploying a conventional military counter-weight in Europe. In other words, while the perception of the United States as an adversary

inspired a Soviet strategic response, the nature of that response was very significantly determined by the internal economic and technological constraints placed upon Soviet policy. Added to the influence of domestic constraints, the ground Army 'reaction' was encouraged by Russian military tradition and experience, as well as positively demanded by the principles of Stalinist strategic orthodoxy.

Strategic Air Power

Although there was no major reform of strategic air doctrine in Stalin's time, there was evidence of some public support for its revision, accompanied by a major investment in the development of long-range aircraft. The apparently intensified interest in strategic aviation likely represented a reaction to the superiority of western aviation after the war. The physical evidence of the Allied bombing of Germany observed by Stalin on the occasion of the Potsdam Conference, reportedly prompted an acceleration in the development of Soviet strategic air power, a project which came before the Politbureau in 1948.(141) Yet another external encouragement for the improvement of strategic aviation was the technological treasure

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(141) Garthoff, Soviet Strategy in the Nuclear Age, op. cit., p.178.

which fell into Russian hands during the occupation of Germany. The Soviet occupation zone included about 80% of enemy aircraft production facilities.(142) However, while a heightened interest in long-range aviation and the programme of bomber development were likely stimulated from abroad, the still largely unchanged nature of air doctrine demonstrated the limited effect of external stimuli on Stalinist air doctrine.(143)

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(142) Group-Captain D.M. Clause, 'Soviet Concepts of Air Power', in The Soviet Union in Europe and the Near East: Her Capabilities and Intentions, op. cit., p.61.

(143) Garthoff, Soviet Strategy in the Nuclear Age, op. cit., pp.170-176.

Air Defence

While the declaratory Soviet position on strategic aviation did not undergo any radical revision during Stalin's post-war years, military policy affecting the nation's Air Defence Forces (PVO) was substantially altered. Air defence had not been regarded as a high priority strategic mission either before or during the Great Patriotic War.(144) However, after the war a vigorous attempt was made to increase the nation's air defence capability. This re-assessment of air defence marked a clear Soviet reaction to an adversary with extensive experience in strategic bombing, superior bomber technology and a rapidly growing commitment to long-range aviation. Specifically, the Soviet reaction involved an intensive development of jet aircraft suitable for defensive operations, a programme of fighter pilot training, the expansion of air base and ground support facilities and an effort to establish an early warning radar system.(145) Each of these actions can be reasonably regarded as a response to western air power.

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(144) For a basic historical outline, see Voiska protivovozdushnoi oborony strany. Ist. ocherk, Moscow: Voenizdat, 1968, Pt.III, Ch.1 and Ch.2, p.337 ff.

(145) Kilmarx, op. cit., p.228.

Declaratory Naval Doctrine

Similarly, the clear support for the construction of an ocean-going navy during the Stalin period was very likely encouraged by the example of large western navies and as such, also qualifies as a kind of Soviet reaction to external stimuli. The desire for a shift in naval doctrine and deployments received far more high level backing than the occasional suggestion of increased emphasis on strategic bombing. Stalin personally expressed his own desire for a 'big navy' posture on a number of occasions. However, the simple recitation of 'old school' doctrine did not produce an effective 'response' to western naval superiority in operational terms, as neither the doctrine nor the quantity of surface ships required by the 'old school' philosophy were produced.(146)

A far more direct and effective reaction took place with regard to Soviet subsurface forces. After the Second World War, the Russians were confronted by large Anglo-American surface fleets. Further, the post-war western

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(146) See below pp. 175-176.

alliance arrangements between Europe and North America relied significantly upon American seaborne supply and reinforcement of Europe. The Soviet policy on submarine construction, providing for a substantial increase in submarine strength, was a response to the new post-war naval environment, arming the USSR with an expanded submarine force in order to assault enemy surface fleets and to sever the American-European sealink.

Military Research and Development

While the attempt to develop atomic weapons in the USSR began before the first US test, the acceleration of atomic research after the war represented a reaction to the much more advanced American capability. From the available evidence it would appear that Stalin regarded a permanent American atomic monopoly as intolerable. He, therefore, ordered that a Soviet weapon be developed as soon as possible, marking a direct emulative reaction to the United States. Similarly, the post-war effort to produce strategic bomber aircraft was also spurred by the example of western capabilities. However, in each case - atomic weapons and long-range aircraft - after the technology had been developed it was placed within a Soviet doctrinal context. In other words, even after acquiring both bombs and bombers, the Russians did not adopt the air-atomic emphasis looming ever larger in American strategic thought. Technology may have been emulated but doctrine was not.

Unlike the programmes of atomic and aircraft research, the intensive and highly significant effort to develop a Soviet missile capability can only be considered as a response to American actions in the broadest terms. It can be regarded as responsive only in so far as it was prodded by a desire to acquire an intercontinental strategic reach, drawing North America within the range of Russian strike forces. However, the history of Soviet missile R & D reveals its essentially domestic origins.(147)

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(147) See pp. 148-155, 179-180.

Evidence of Domestic Influences on Doctrine

While there were specific instances of Soviet reaction to and occasionally emulation of American actions - particularly in technological terms - the sources of Soviet strategic doctrine and policy in this period were overwhelmingly domestic or internal, as Stalinist strategic doctrine displayed a rigidly unchanging and unresponsive quality.

The Doctrinal 'Freeze'

Stalinist strategic doctrine as a whole clearly displayed a stiffly unresponsive character. More than seemingly unmoved by American actions, it appeared overtly hostile to any reforming influence, whether foreign or domestic. Despite dramatic technological developments in the United States and significant changes in the Soviet strategic environment, 'Stalinist Military Science' was established - in its wartime form - as the supreme accomplishment in military thought, superseding all other analyses. American doctrine was sharply dismissed as trivial and unscientific. All earlier commentators on strategy - including Lenin - were discounted and Stalin proclaimed the exclusive strategic authority and his military science the ultimate unchallengeable conception.

This intensely rigid and introspective declaratory view

was in part the result of the needs of domestic and foreign propaganda, a desire to assure the Soviet prople and the world at large that the USSR's technological inadequacies would have no significant effect on the outcome of another conflict. It may also have been supported by the same conservatism which initially prevented American planners from re-drawing US strategy immediately after the war. However, beyond the needs of propaganda and the effect of any professional military conservatism, the virtual 'freeze' on doctrine in general, the continued primacy of 'the permanently operating factors' in particular, and the relegation of such factors as surprise attack to a secondary status, were decisively determined by the views and objectives of Stalin himself. The hardening of doctrine in its World War II form was largely the result of Stalin's personal strategic convictions, as well as the aim of maintaining his position as the definitive strategic thinker and the architect of victory in the Great Patriotic War. Sensitive and direct doctrinal response to American actions or the implications of modern weapons technology would have endangered the Premier's Olympian place in Soviet history and strategic thought and compromised his authority in comtemporary affairs. Each of these entirely domestic, indeed personal, political factors proved far more influential in forming Soviet doctrine than the actions of the United States.

Assessment of Atomic Weapons

The secondary role assigned to the atomic bomb in both declaratory and operational doctrine during these years provides further evidence of Stalinist strategic insensitivity to US actions. The development of atomic weapons in the USSR was greatly accelerated by American actions and the official denigration of their significance was to a degree inspired by the need to put the best public face on the Soviet Union's technological shortcomings. However, the persistent subordination of the new technology to established systems - even after the end of the American atomic monopoly - and the failure to train the armed forces in the conduct of an atomic war was internally motivated. Firstly, the entire weight of Soviet tradition and experiences, backed by the example of the recent world war, did not favourably dispose the Russians to a radically new air-atomic strategy. Like many of their American counterparts, Russian commanders continued to prefer battle-tested systems and proven strategic concepts. This preference was no doubt effectively supported within the policy-making machinery by a large and politically influential ground army which would have had little to gain by mimicking the American assessment of long-range aviation and atomic weapons. The much inferior status of these weapons was also ensured by Stalin's personal desire to preserve wartime

strategic doctrine inviolate. Beyond the political motivations for maintaining the doctrinal status quo, the Premier's unadmiring view of the atomic bomb was also due to his apparent failure to fully understand the profound effect which technology was to have on the nature of modern warfare. As a consequence, while strongly supporting every effort to end the American atomic monopoly and acquire the latest variety of 'improved explosive', Stalin did not recognise any need to modify Soviet doctrine.(148) The new and better bomb was simply to increase the effectiveness of the Great Patriotic War strategy.

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(148) Kenneth R. Whiting in 'The Past and Present of Soviet Military Doctrine', Air University Quarterly Review, vol.XI, No.1, Spring 1959, pp.38-60., questions the degree to which Stalinist doctrine was actually 'backward and obtuse', suggesting that it was adequate to Soviet interests and capabilities at the time.

Role of the Ground Army

As well as failing to imitate the growing air-atomic emphasis in US strategy, the Russians also maintained a view of ground armies which diverged dramatically from American policy. In accord with American tradition, the United States rapidly dismembered its conventional forces after the war. In sharp contrast, Stalin presided over a programme of Army reorganisation and modernisation, providing the USSR with a large and generally improved standing army.

Although any drastic demobilisation of the American kind would have been incompatible with the responsive 'hostage Europe' policy, the distinctly 'un-American' stress on conventional armies in Soviet doctrine was largely the product of domestic factors. Russia's military tradition, historical experience and geo-political position would have all but compelled any post-war government to retain the powerful ground armies which had been maintained long before the United States emerged as a world power. High conventional force levels were essential to resist local attacks, as well as to ensure the 'progressive' political development of central Europe. The dominant strategic role of the army was also sustained by its position as the major and most influential

military institution within the USSR, fully able to resist any encroachment upon its status from the other armed services.

Finally, the army's paramount place was decisively supported by Stalin's personal interest in the preservation of a doctrinal orthodoxy which had long upheld the primacy of the ground forces within Russian and Soviet strategic doctrine. In short, 'hostage Europe' aside, any emulation of American ground force policy was firmly ruled out by the historical and geo-political facts of Soviet life, as well as the overwhelming weight of institutional and even personal political interest.

Naval Policy

After many years of marked inferiority to the great naval powers of the west, declaratory Soviet naval doctrine did, in fact, betray some evidence of responsiveness to western, if not particularly American, capabilities. Any assessment of the 'big navy' element in declaratory doctrine as a direct reaction to a specifically American challenge is complicated by Stalin's expression of an 'old school' preference in naval planning long before the United States developed as the major 'threat' to Soviet security. As early as the 1930s, Stalin sought increased naval strength in an effort to achieve something nearer equality with the west at sea. More importantly, claims of responsiveness in Stalinist naval doctrine are not entirely confirmed by the record of naval planning and deployments during the late 1940s and early 1950s. In contrast with the public support for a large ocean-going surface fleet of the American or British type, no such force was deployed, nor was an operational ocean-going strategy developed. Instead, the Soviet Navy, while substantially strengthened after the war, largely retained its secondary strategic status and coastal defence role. Its major new responsibility was an interdiction role to be performed by submarines. The failure to make good in operational terms on

the ambitious 'old school' surface doctrine was the consequence of several domestic constraints on policy. Firstly, Russian historical experience, the geographical position of the USSR and possibly the weight of Army opinion and influence, all worked to maintain a Navy of less than 'blue water' capabilities, as well as a naval strategic role which declaratory doctrine continued to describe as indecisive, despite several 'old school' public pronouncements. Secondly, a Navy of the formidable proportions which Stalin desired would have added a heavy burden to the strained resources of post-war Russia. Ravaged by years of fierce fighting, the development of a large 'balanced' fleet at least had to be postponed. In the interim, a more economical and traditional alternative was accepted in the maintenance of the Navy's role as a largely defensive force of only secondary strategic significance. The most direct and effective Soviet naval reaction to western policy under this interim strategy was expressed in the much expanded submarine force designed to breech seaborne trans-Atlantic links between the United States and Europe.

Role of Air Power

To the extent that the discussion of long-range air power in the Soviet Union revealed an increased interest in strategic bombing after the war - an interest reflected in the vigorous effort to produce a long-range bomber - the Soviet Union might be said to have reacted to the example of western capabilities. However, any such 'reaction' proved to be very limited in its effect, as Soviet air doctrine remained largely unchanged in both declaratory and operational terms throughout the post-war Stalin period. Efforts were made to reorganise and improve Soviet capabilities in the air; but the Russians did not choose to react to their great air-atomic adversary by imitating US air doctrine. Instead, aviation - strategic, tactical and defensive - was confined to the important but secondary strategic mission of supporting ground operations and providing for the defence of Soviet air space. Elevating air power beyond this secondary status would have defied Soviet military tradition generally and the vital strategic model of the Great Patriotic War in particular. Air officers would also have had to

succeed in accomplishing the very formidable task of superseding Army influence within policy-making circles, a totally unobtainable objective in view of Stalin's unbending enforcement of World War II strategy as a timeless conception.

Finally, any revolution in operational air strategy was opposed - even if it had been thought desirable - by the economic and technological constraints on Soviet policy which significantly influenced the extent of any increase in Air Force strength.

Rocket and Missile Development

Finally, the early Soviet commitment to rocketry was clearly not a direct emulative reaction to the United States. Indeed, the military interest in rockets long preceded the emergence of the USA as a major factor in Soviet defence planning. Rocket scientists trained before the war were able to make highly profitable use of captured German research facilities and personnel. They rapidly proceeded to develop a missile capability superior to that of the USA at a time when the Americans were fixed to strategic aircraft as their long-range delivery system. Rather than a direct reaction to the United States, the emphasis on missiles represented a decision to pursue an independent technological initiative and advantage, a Soviet solution to the problem of developing an intercontinental strike capability.(149) As well as the objective strategic arguments urging the deployment of a

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(149) Martin Caidin in Overture to Space. New York: Duell, Sloan and Pearce, 1963, pp.53-54, explains that the idea that the Russians in the late 1940s chose to build ICBMs rather than strategic bombers because they lacked aircraft and airfields is untrue. He recalls that in the early post-war period, the decision was made to develop both long-range missiles and strategic bombers, although the seven to ten year 'lead time' for the bombers prevented the aircraft R & D programme from bearing fruit until the mid-1950s.

missile force the vigorous R & D effort in this field was also advanced by the support of the Soviet Army, the armed service which was to have charge of the nation's long-range missile strength until the establishment of the independent missile service under Khrushchev. Any interpretation of the missile programme as directly responsive to the United States is further qualified by the Soviet concentration during and for several years after the Stalin period - on the deployment of Intermediate and Medium Range Ballistic Missiles (I/MRBM), rather than ICBMs, an emphasis in part reflecting the still potent influence of Russia's traditional concern with the European theatre.

The Stalinist 'Freeze':
Operational and Doctrinal Consequences

It was to remain the Stalinist expectation that the course of a future war would parallel that of the Great Patriotic War, a massive and prolonged struggle, centring on the European continent in which the superior ground strength of the USSR would eventually wear the enemy and his technology into exhaustion. Stalin's highly unresponsive refusal to accept any reform or reconsideration of post-war strategic doctrine, even after the USSR had developed atomic weapons and expanded considerable resources on missile and bomber research, firmly fixed Soviet doctrine in its World War II mould.

This 'freeze' on strategic thought was to have both operational military and doctrinal consequences. First, in an operational sense, the absolute and unquestionable assurance that 'Stalinist Military Science' would inevitably guarantee victory for the Soviet Union in any future war may have instilled an unwarranted sense of complacency or over-confidence, which while always undesirable, was particularly so when the US-Soviet power balance dramatically favoured America.(150)

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(150) H.S. Dinerstein, 'The Revolution in Soviet Strategic Thinking' in Phillip E. Mosely, ed., The Soviet Union 1922-1962. New York: Praeger, 1963, p.362.

Second, the 'permanently operating factors', as a fundamental feature of 'Stalinist Military Science' provided guidelines far too general and truistic to be of any practical value in actually formulating an operationally useful or effective strategy. Despite the ritual fanfare which these five allegedly decisive factors were constantly accorded, they amounted to little more than an extravagantly overblown strategic commonplace.(151)

Further, the affect in operational terms of a sterile official doctrine was made even more damaging by its resolute enforcement as the sum total of strategic truth. In such circumstances the Soviet armed forces were prevented from grappling with many of the strategic realities of the post-war world. More specifically, the 'freeze' on doctrine certainly prevented the armed forces from attaining as high a degree of preparedness for atomic warfare than might otherwise have been achieved by the early 1950s. Although dramatic progress was made in weapons development, at the time of Stalin's death the armed services were trained to wage only conventional war. The first series of articles on nuclear weapons for the instruction of military officers did not

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(151) Dinerstein, 'The Revolution in Soviet Strategic Thinking', Op. cit., p.362.

appear until 1954.[152] It was not until that date that serious studies are known to have been made on troop training for nuclear war. In short, while Stalin approved the rapid production of atomic hardware, as well as long-range delivery systems, he firmly refused to permit an unfettered analysis of their strategic significance. Soviet forces were consequently supplied with the latest weapons the nation's technology could provide, but forbidden to study their most effective operational use.

As well as limiting the operational capabilities or combat-readiness of the Soviet armed forces, the 'freeze' on doctrine obviously also retarded the development of strategic doctrine itself. As a result of Stalin's unwillingness to accept certain of the implications of modern weaponry and the strict enforcement of his strategic views, the conventional European theatre orientation of Soviet doctrine was not only maintained throughout the Stalin period, but survived into the Khrushchev era, when the concentration on European ground warfare might well have been rapidly replaced by a focus on the major air-atomic adversary at intercontinental range.[153]

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(152) Garthoff, Soviet Strategy in the Nuclear Age, op. cit., p.64.

(153) Wolfe, op. cit., p.35.

Perhaps more importantly, as the United States was moving to an air-nuclear strategy and the concept of nuclear deterrence was making its first appearance in America, Stalin's unyielding grip on the lessons of the Great Patriotic War made even the examination of the deterrence concept impossible until after his death. The ban on the expression of any new strategic ideas until at least 1953 opened a doctrinal 'lag' or 'gap' between the United States and the Soviet Union over the concept of nuclear deterrence. With or without Stalin, the strategic perspective of the Soviet Union would have inevitably differed from that of the United States. The realities of geo-politics and the experience of Russian and Soviet history alone strongly argued for a concentration on the European theatre and the critical mission of ground armies. However, the imposition of Stalinist orthodoxy introduced or perhaps increased an underlying strategic asymmetry between the post-war doctrines of the USSR and the United States, establishing a fundamentally asymmetrical relationship which, in one form or another, was long to survive both Stalin and

'Stalinist Military Science'.(154)

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(154) Roman Kolkowicz in 'Strategic Parity and Beyond', World Politics, April 1971, pp.429-451, argues that: 'Soviet strategic doctrine and capabilities would appear to have lagged behind those of the United States by about five years'.(p.439) Also on the 'lag' issue, see, by the same author, Soviet Strategy in the Nuclear Era, I.D.A. N-789, September 1970; R.L. Garthoff, in 'Soviet Attitudes Toward Modern Air Power', Military Affairs,vol.XIX, No.2, Summer 1955, pp.76-80; appears to lend some support to the 'lag' concept, at least as it concerns air power. In 1955 Garthoff argued that the then Soviet view of the role of air power closely resembled that of the United States ten years earlier. He contended that the Russians had in the first ten years after World War II elevated strategic air power from a 'sideshow' to a 'main show', while the United States in the same period had come close to establishing air power as the central feature of US defence policy. (p.80) Colin S. Gray in 'Predicting Arms Race Behaviour', Futures, October 1974, pp.380-385 appears to regard the suggestion of a 'lag' as a product of the misconception of the 1960s that US strategic doctrine represented the only reasonable viewpoint. The fact that Russian doctrine differed from that of the United States, was taken as proof of the 'lagging' or 'backward' nature of Soviet strategy.(p.385) Other works touching on the educational issue include Stanley Hoffman, Gulliver's Troubles or the Setting of American Foreign Policy. New York: McGraw-Hill, 1968, p.160; Johan Jorgen Holst and William Schneider, eds., Why ABM? Policy Issues in the Missile Defence Controversy. New York: Pergamon Press, 1969, pp.168-169; Edward Klein and Robert Kittell, 'Shh! Let's Tell the Russians', Newsweek, May 5, 1969, p.47; Federation of American Scientists, Report of the Ad Hoc Committee on Military R and D of the Federation of American Scientists, Is there an R and D Gap? May 6, 1971.

While Stalinist doctrine failed to produce any concept of nuclear deterrence, the assignment of large Soviet conventional forces to Europe and the rearmament of indigenous east European armed forces were in part motivated by a strategy intended to 'deter' an American nuclear attack by threatening the United States with the occupation of western Europe. In other words, the 'hostage Europe' strategy can be regarded as an application of the deterrence principle and further, as an application of the principle in response to a specific US action - the development of an American atomic capability.

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(155) Wolfe, op. cit., p.34.

PART II

BUDGETARY STABILITY

vis-à-vis

STRATEGIC SUPERIORITY

Chapter 1

The 'New Look' in US Defence Policy

Re-examination of Defence Policy

Truman Policy Under Attack

The 1952 presidential election followed several years of the danger, frustration and expense of Containment. The Republican attack on the Truman Administration's foreign and defence policies emphassised two major themes. First, it stressed the need for a more dynamic or offensive American posture, not merely containing but positively shrinking the power and proportions of the Communist world. The second and perhaps somewhat incompatible theme was the necessity for reducing both the cost and the risk of America's international commitments, providing for the nation's economic as well as its military security. In short, the Republican Party under Dwight Eisenhower offered the very attractive, if rather improbable, prospect of greater security at a lower political and economic price.(1)

In the period from the 1952 election to the public announcement of the 'New Look' defence policy in January 1954, a number of study papers and discussions marked the gradual formulation of the new Eisenhower policy. The President-elect set the central problem of his administration before a gathering of advisers just after the election. Mr. Eisenhower discussed the need to solve '"the great equation" of maintaining indefinitely a strong military force without bankrupting the country in the process'.(2) In 1954 the New Look was presented as a solution to 'the great equation'.(3)

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(1) Robert E. Osgood, Limited War. Chicago: University of Chicago Press, 1957, p.241.

(2) Edward A. Kolodziej, The Uncommon Defence and Congress, 1945-1963. Ohio State University Press, 1966, p.181.

(3) On the development of the New Look policy, see Samuel P. Huntington, The Common Defence. New York: Columbia University Press, 1961, pp.73-75; Kolodziej, op. cit., pp.183-189.

The New Look Unveiled

The 'Long-Haul' Approach

On January 7, 1954 Dwight Eisenhower gave the first presidential expression of the New Look in American defence policy.(4) The President described the policy as resting upon a 'long-haul' approach to defence planning. In place of costly 'year of crisis' programmes, the United States would indefinitely maintain a high plateau of preparedness.(5)

Increased Flexibility with Reduced Spending

Two of the most valuable benefits accruing from the 'long-haul' approach were said to be increased flexibility and reduced defence costs. The greater flexibility or 'selectivity' of the new strategy was to allow the United States to resist Soviet aggression on 'our' terms by 'means of our choosing', as Secretary of State, John Foster Dulles put it.(6) 'A potential aggressor must know', insisted the Secretary, 'that he cannot always prescribe battle conditions that suit him'.(7) On the same theme, Admiral Arthur W. Radford explained: 'We are serving notice on the other side that if they hit us at one place, we might hit back at them somewhere else and not necessarily with atomic weapons. This gives us the initiative'.(8)

A more flexible strategy would permit the west to adopt the posture best suited to each developing situation. American strategy

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(4) New York Times, January 8 1954, p.1. New York Times noted below as NYT.

(5) NYT, January 24, 1956, p.11.

(6) NYT, January, 13, 1954, p.1.

(7) NYT, January 13, 1954, p.1.

(8) NYT, March 17, 1954, p.6.

Dulles said:

> Must have the mobility and flexibility to bring collective power to bear against an enemy on a selective or massive basis as conditions may require. For this purpose, the arsenal must include a whole range of air, sea and land power based on both conventional and atomic weapons. These new weapons can be used not only for strategic purposes, but for tactical purposes. (9)

As well as flexibility, New Look planning would also reduce the accelerating cost of American defence by offering a variety rather than a 'multiplication of military means', permitting America 'to get and share more security at less cost' in Secretary Dulles' words.(10) Indeed, the desire to restrain the increasing defence burden, defeating the Soviet Union in its alleged attempt to precipitate an American economic collapse, was one of the most important inspirations for the entire New Look.(11) Hanson W. Baldwin of the New York Times described the economic motive behind the New Look as meaning '... we have slightly increased our calculated military risk in order to decrease our calculated economic risk'.(12)

Significance of Modern Weapons Technology

In addition to budgetary savings as a consequence of more thoughtful long-range planning, economies were also to result from the recognition and thorough exploitation of what the President described as 'the new relationship between men and materials' in modern warfare.(13) The New Look was based upon the premise that a revolution had taken place in weapons technology, transforming the nature of warfare, substituting to a significant degree air-nuclear power for large and costly ground

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(9) NYT, March 20, 1954, p.1.
(10) NYT, January 13, 1954, p.1.
(11) NYT, January 24, 1954, Section IV, p.3.
(12) NYT, February 24, 1954, p.13.
(13) NYT, January 8, 1954, p.1.

armies. Discussing nuclear weapons in his January 1954 State of the Union Address, President Eisenhower explained that America and her allies would not shrink from their use against an aggressor, '... if they are needed to preserve our freedom'.(14) A few days later, the Secretary of State declared a fundamental principle of the New Look, explaining that henceforth America would confront any enemy with 'a great capacity to retaliate instantly by means and at places of our own choosing', the strategy which was to be labelled 'massive retaliation'.(15) Mr. Dulles also announced that the United States would achieve improved security at a saving to the taxpayer 'by placing more reliance on community deterrent power and less dependence on local defensive power'.(16) In March the Secretary pledged that New Look policy did not mean that the United States would 'turn every local war into a general war'.(17) Instead, he described the New Look's chief motivation as the desire to assure the Russians: 'if they attack the United States or our vital interests, we will hit then with everything we have'.(18)

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(14) NYT, January 8, 1954, p.1.

(15) NYT, January 13, 1954, p.1.

(16) Ibid.

(17) NYT, March 20, 1954, p.1. Colin S. Gray argues that Secretary Dulles always thought of US nuclear retaliation as 'selective'. Gray quotes Dulles as describing the American position as 'essentially a policy of deterring war by a capacity for selective retaliation'; Colin S. Gray, 'The Racing "Syndrome" and the Strategic Balance', a paper prepared for The International Seminar on 'The Future Role of Soviet Military Power with the East-West Political Context', Stiftung Fur Wissenschaft und Politik, Eggenberg, West Germany, May 1-2, 1975, p.3.

(18) NYT, March 20, 1954, p.1.

Massive Retaliation and 'Balanced Forces'

Supporting Mr. Dulles on the massive retaliation issue, the President asserted that rapid and devastating retaliation against attack was America's surest defence. The value of surprise attack had increased with the power of modern weaponry. The most dependable deterrent against nuclear surprise was now the aggressor's awareness that it would bring instant retaliation.(19) The President contended that any expression of concern over a possible 'imbalance' in American defence policy as a result of its nuclear emphasis did not represent a professional military view. Mr. Eisenhower said that for the professional the 'balanced forces' concept did not require slicing the defence budget into three equal parts, with one third going to each of the major armed services. Balance was properly defined in terms of the strategic circumstances existing at any given time. In an age of air-nuclear power, a proper balance required an emphasis on strategic nuclear forces.(20)

Declining Role of General Purpose Forces

The stress on the importance of nuclear weapons clearly brought a decline in the strength and strategic significance of ground armies. As the major means of delivering the New Look's all important nuclear blow, the Air Force was regarded as the most important armed service.(21) The bombers of the Strategic Air Command were described by Defence Secretary Wilson as the nation's first line of defence, as well as the primary deterrent.(22) General Curtis E. Le May identified 'an attack

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(19) NYT, January 14, 1954, p.17.

(20) Ibid., p.18.

(21) NYT, February 6, 1955, Section IV, p.5.

(22) NYT, April 5, 1955, p.14.

by a substantial, long-range nuclear air force', as the greatest danger facing America. He warned:

> Such a force can be deterred, or - in the event of aggression - destroyed only by superior air power; both medium and long-range, backed by adequate defensive air power. (23)

While the Air Force was assigned the key role, the US Navy retained major responsibilities, largely because of its submarine and anti-submarine units, as well as its carrier-based and nuclear armed aircraft.(24) The US Army and Marine Corps became the 'low men on the totem pole'.(25) The revolution in military technology and the resultant change in the relationship between men and weapons were said to have ended the era of large and costly ground armies. Continuing their full-scale maintenance in the atomic age was regarded as both economically wasteful and strategically outmoded.

US ground forces in Korea were to be withdrawn as soon as possible(26) in accord with the New Look commitment to a general reduction in America's international military obligation, returning as many troops to the United States as could be removed from their stations around the world.(27) Under the new defence policy such conventional forces as remained in active service were to be augmented by a strong and highly mobile 'strategic reserve'.(28) In the words of President Eisenhower's 1954 State of the Union Address:

> Our forces must regain mobility of action. Our strategic reserves must be centrally placed and readily deployable to meet sudden aggression against ourselves and our allies. (29)

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(23) NYT, December 7, 1955, p.34.

(24) NYT, February 6, 1955, Section IV, p.5.

(25) Ibid.

(26) NYT, January 8, 1954, p.1.

(27) Ibid.; NYT, January 24, 1954, Section IV, p.3.

(28) NYT, January 13, 1954, p.1.

(29) NYT, January 8, 1954, p.1.

Finally, the New Look also included among its high priorities the improvement of America's continental air defence through guided missile development,(30) the strengthening of interceptor forces and the deployment of improved radar warning systems.(31)

First Re-examination of Massive Retaliation : Limited Nuclear War

While the reliance upon massive retaliation as the centre piece of American defence policy was publicly adopted in 1954, it was at least as early as 1955 that this key aspect of the New Look came under a re-examination which was to lead to a so-called 'New New Look' in the latter half of the 1950s.(32) The first official reconsideration of massive retaliation was closely related to the anticipated Soviet achievement of nuclear parity with the United States. Once freed from the inhibitions of massive retaliation, it was feared that the Russians would mount political and military advances supported by their superior conventional forces.(33) This concern inspired the administration to begin a modification of massive retaliation centering around tactical nuclear weapons and the concept of limited nuclear war, planning for the use of small battlefield weapons as well as, or even instead of, large city-destroying bombs. The progress of this modification was marked by a National Security

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(30) NYT, February 6, 1955, Section IV, p.5.

(31) NYT, January 27, 1955, p.1.

(32) Massive retaliation, 'or the threat of it' is described as 'in decline almost from its enunciation in 1954', by Thomas C. Schelling, Arms and Influence. New Haven, Conn.: Yale University Press, 1966, p.190. Urs Schwarz judges the New Look's nuclear emphasis as having been 'by 1953 rendered obsolete by events and by private strategic study' but, nevertheless, assesses it as 'not altogether ineffective' as a positive influence - from the American perspective - on the foreign policy actions of the Soviet Union. Urs Schwarz, American Strategy: A New Perspective. New York: Doubleday, 1966, pp.84-91.

(33) NYT, March 21, 1955, p.1.

Council instruction to the Defence Department assuming the use of nuclear weapons in any future war, as well as by NATO's acceptance of atomic weapons as the key to European defence.(34)

In fact, America's interest in tactical nuclear weapons began long before the outset of any review of massive retaliation. In 1951 the United States conducted tactical nuclear weapons tests and was considering the use of tactical weapons in limited conflicts. By 1957 the decision was made to provide the nation's ground, air and naval forces with these weapons, in large part as a result of the western inability or unwillingness to match Soviet conventional strength in Europe.(35)

In March of 1955, Secretary Dulles discussed nuclear retaliation at less than a full-scale level. He spoke of the growing probability that tactical nuclear weapons would be used against military targets, sparing the civilian population. With an increasing store of tactical weapons, the Secretary believed that there would be a corresponding decrease in the likelihood that the large bombs would ever be used.(36) President Eisenhower spoke of using atomic weapons with a high degree of precision. The President explained:

> Where these things are used on strictly military targets and for strictly military purposes, I see no reason why they shouldn't be used just exactly as you would use a bullet or anything else. (37)

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(34) NYT, March 17, 1955, p.5.

(35) Edgar M. Bottome, The Balance of Terror. Boston: Beacon Press, 1971, pp.25-31.

(36) NYT, March 16, 1955, p.1.

(37) NYT, March 17, 1955, p.1.

The New Look in Operation

Defence Spending and Manpower Levels

Among the proudest achievements of the New Look in operation was the firm limitation of military spending, an accomplishment reflected in the declining manpower strength of the nation's ground armies. Defence spending in the first of the fully New Look budgets - FY 1955 - displayed a genuine concern for reduced military expenditure. The administration's claim in January of 1955 of having accomplished: '... the largest single tax reduction in any single year in the country's history',[38] was made possible by cuts in defence costs. Military spending fell by $8.1 billion from its FY 1955 high of $53.6 billion,[39] accompanied by a corresponding slump in the size of the nation's ground forces. The total number of active servicemen in June 30, 1954 was 3,328,000 as compared with 3,046,700 in June, 30, 1955.[40] This reduction trimmed the Army from nineteen to seventeen divisions in FY 1955, a force of 1,407,000 troops cut to 1,172,000. Similarly, the Marines dropped from 225,000 to 215,000 troops. In addition to ground forces, the Navy went from 741,000 seamen in June of 1954 to 689,000 in June, 1955.[41]

In the preparations for the FY 1956, defence budget, the administration abandoned the attempt to stabilise military spending at $34 billion, accepting expenditures of $36.7 billion.[42] Of this total figure, the Army was provided with nearly $9 billion compared with more than $16 billion in FY 1953.[43] As with

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(38) Huntington, op. cit., p.76.
(39) Ibid.
(40) Kolodiej, op. cit., p.190.
(41) Ibid.
(42) Huntington, op. cit., p.93.
(43) Ibid., p.79.

spending levels, the administration's manpower planning for FY 1956 approximated ground force levels originally intended for the following fiscal year. The total number of men in uniform in June of 1956 was 2,815,000, originally the FY 1957 goal.(44) The budgetary and manpower statistics for FY 1957 continued the New Look trends, with very little change. Defence Secretary Wilson explained to the Congress that the administration was proposing nothing 'fundamentally different from that outlined ... last year'.(45) Defence expenditure exceeded $35 billion, with the Air Force receiving the largest share of the total, approximately $15.7 billion of the administration's requests. The Army was to operate on $7.8 billion, while the Navy received some $10 billion.(46) Manpower levels experienced only minor changes.(47)

Improved Mobilisation Base

While a future war under the New Look schema was to be a relatively brief nuclear contest, the Eisenhower Administration did make some provision against the possibility that a longer struggle involving substantial numbers of troops might develop, authorising measures designed to improve the national mobilisation base. Perhaps the most significant of these, and another hallmark of the New Look in operation, was the strengthening of manpower reserves. As an improved reserve system promised substantial forces at a relatively low cost, it was entirely compatible with New Look doctrine. The increased reserve

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(44) Huntington, op. cit., p.77.
(45) Kolodziej, op. cit., p.226.
(46) Ibid.
(47) Huntington, op. cit., p.88.

emphasis resulted in the growth of the reserves from 578,000 in June of 1953 to one million men in June of 1957. Spending on the reserves climbed to $879.8 million in FY 1957, more than double the rate at the outset of the Eisenhower Administration.(48)

The Nuclear Emphasis

The New Look in operation was also marked by implementation of the doctrinal concentration on nuclear weapons. It was very early established, in Eisenhower planning that any war beyond the 'brush fire' level would certainly be a nuclear conflict. Nuclear weapons were to be considered 'conventional', available for use whenever the military situation required. The President explained that the administration's policy was 'to stress new weapons, to stress the modern means of delivery of firepower and to minimise, so far as we could, the use of individuals who could better be employed in building roads and schools and other things'.(49)

Nuclear power was not to be reserved for the destruction of large enemy urban-industrial centres in a general war. Tactical weapons were also to be used in lower level conflicts. In Dulles' words, nuclear weapons were '... becoming more and more conventional and replacing what used to be called conventional weapons'.(50) By the end of 1954, the United States had persuaded the NATO alliance to accept nuclear weapons as the basis of any feasible European defence,(51) a defence which the administration believed, at least for a time, could

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(48) Huntington, op. cit., p.81.
(49) NYT, August 2, 1956, p.1.
(50) Huntington, op. cit., p.80.
(51) Ibid., pp.80-81.

be mounted with high precision against exclusively military targets. Tactical nuclear bombs need not, it was said, bring great destruction to civilian population centres.(52)

Strategic Aviation

With significant reductions in the role and actual proportions of ground armies in New Look policy, and the establishment of nuclear weapons as the central feature of American strategy, the responsibilities of strategic aviation were expanded. However, an examination of the New Look in operation reveals that this increased status was reflected largely in the relative decline of the other armed services rather than in any absolute expansion of long-range airpower.(53) The Eisenhower Administration did not order any rapid increase in strategic air power of the sort which might have been expected from the tenor of New Look doctrine. Indeed, President Eisenhower approved a slow down in the rate of the Truman Administration's plan for Air Force expansion to a total of 143 wings by December of 1955. This overall goal was reduced to 137 wings, eliminating six wings of airmen and transport aircraft but retaining the Truman figure of 126 combat wings. Although preserving the 126 wing objective Eisenhower planners postponed its achievement from the end of 1955 to June of 1957.(54)

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(52) However, such confidence in the almost surgical capabilities of tactical nuclear weapons was not supported by a 1955 simulation of a nuclear battle with many European parallels - Exercise Sage Brush. It appeared impossible to conduct any effectively limited nuclear war. Massive destruction, likely escalating to full-scale strategic warfare, seemed probable. (NYT, December 5, 1955, p.12).

(53) Huntington, op. cit., p.83.

(54) Ibid.

Air Defence

The New Look programme also included as one of its most prominent declaratory and operational features a substantial strengthening of America's continental air defence. Continental air defence was, in President Eisenhower's view, one of the two fundamental elements of a deterrence policy, the other being strategic air power.(55) But unlike the New Look as it affected long-range aviation - where force levels were maintained at the standard set by the previous administration - the new policy brought a very significant increase in the nation's continental air defence capability, establishing an extensive and integrated air defence system far superior to anything the United States had ever before commanded. The much increased air defence effort marked an important departure for American strategic planning which was not made to attend to the defence of the continental United States against direct attack, moderating Air Force emphasis on offensive operations.(56)

Missile Development

The New Look in operation was also marked by an intensified effort to develop a missile capability. After World War II a large number of German rocket research personnel and quantities of research equipment were transported to the United States. However, this imported expertise was not, as in the USSR, fuelled into an intensive

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(55) Huntington, op. cit., p.83.

(56) On the build-up in US air defence, see NYT January 27, 1955, p.1; NYT, February 6, 1955, Section IV, p.5; Huntington, op. cit., pp.326-341.

programme of missile development.(57) Nevertheless, despite the relatively low level commitment to missile research, between 1945 and 1953 some 114 missile projects were initiated by the armed services.(58)

During the first half of the 1950s a number of official and unofficial studies were undertaken which concluded that an acceleration of the nation's missile programming was essential. In 1954, the Strategic Missile Evaluation Committee or 'Von Neumann Committee' reported that a workable ICBM could be produced within six to eight years and urged that its development be established as the 'highest national priority' in view of the Soviet lead in missile technology.(59) At the same time a Rand Corporation study, as well as the findings of the Joint Committee on Atomic Energy, confirmed the Von Neumann recommendations(60) which had succeeded in instilling a new sense of urgency in the US missile programme. Within a week of the completion of the Von Neumann report the acceleration of the Air Force ICBM project was ordered and a new managerial organisation for missile development - another Von Neumann proposal - was speedily established.(61) By the close of 1955, ICBM research had been greatly envigorated and re-organised and was firmly en route to the production stage of development.

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(57) In 1947 a Defence Department Study, 'Operational Requirements for Guided Missiles' identified the development of guided weapons for the defence of bombers, as well as weapons designed to improve the capabilities of bomber and fighter aircraft as the top priorities in missile research. The development of a long-range surface-to-surface missile was set as a fourth order priority. (Ernest G. Schwiebart, A History of the US Air Force Ballistic Missiles. New York: F.A. Praeger, 1965, p.45). As for the scientific community, both Professor Theodore Von Karman and Dr. Vannevar Bush argued that the missile was unlikely to develop as a major weapon without several years of further research.(Schwiebart, op. cit., pp.43-44,46, 57).

(58) Michael H. Armacost. The Politics of Weapons Innovation: The Thor-Jupiter Controversy. New York: Columbia University Press, 1969, p.27, fn.18.

(59) Ibid., pp.85-86.

(60) Ibid., p.57, fn.104.

(61) Schwiebart, op. cit., pp.75-85.

The Intermediate Range Ballistic Missile (IRBM) programme was much advanced in January of 1955 when the Technological Capabilities Panel, under Dr. James R. Killian, issued a report warning that, without a vigorous missile effort, the USSR would be well placed to threaten American strategic superiority by the early 1960s. It therefore recommended that, in addition to the more challenging ICBM programme, the United States first attempt to meet the Soviet missile 'threat' by deploying an IRBM.(62) Responding to the Killian study, President Eisenhower approved the competitive development of an IRBM by the armed forces, blessing the continued development of the Air Force Thor and Army Jupiter weapons. A vigorous inter-service battle for operational control of the IRBM was decided in 1956 when the Air Force was awarded both the Thor and Jupiter projects.(63)

Development of a Western Alliance System.

While the United States was implementing the New Look massive retaliation policy, it was also engaged in the establishment of a system of anti-Communist alliances, attempting to organise many of the countries along the borders of the USSR and Communist China into collective security arrangements. A rearming West Germany was admitted to NATO in 1955. The Baghdad Pact (Central Treaty Organisation) was signed with American encouragement and the South

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(62) Armacost, op. cit., pp.50-51.

(63) Ibid., pp.117-120; NYT, November 7, 1956, p.1.

East Asia Treaty Organisation (SEATO) was founded.(64)

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(64) Bottome, op. cit., pp.31-35. The New Look policy was subjected to intense criticism from politicians, academics and military commanders throughout the Eisenhower Administration. Much of the controversy related to one fundamental question: What kind of war should the United States be prepared to fight? Would another great war be essentially an air-nuclear struggle in which ground armies would be no more than a secondary element, or would such a conflict witness an air-nuclear exchange as the prelude to vital ground army operations? The debate involved the strategic role of each armed service, as well as the relative significance of their various weapon systems. On the New Look and the views of its critics, see General Matthew Ridgway, Soldier. New York: Harper and Brothers, 1956; W.W. Kaufmann, 'The Requirements of Deterrence', in W.W. Kaufmann, ed., Military Policy and National Security. Princeton, N.J.; Princeton University Press, 1956; Henry Kissinger, Nuclear Weapons and Foreign Policy. Harper and Brothers, 1957; Dean Acheson, Power and Diplomacy. Cambridge, Mass.: Harvard University Press, 1958; Lt. General James M. Gavin, War and Peace in the Space Age. London: Hutchison, 1958; General Maxwell Taylor, The Uncertain Trumpet. New York: Harper and Brothers, 1959; General John B. Medaris, Countdown for Decision. New York: G.P. Putnam's Sons, 1960; Glenn H. Snyder, 'The "New Look" of 1953' in W.R. Schilling, P.Y. Hammond, G.H. Snyder, Strategy, Politics and Defence Budgets. New York: Columbia University Press, 1962, pp.383-524; Bottome, op. cit.,

For the views of the New Look's critics, also see New York Times, January 24, 1954, p.25; March 20, 1954, p.6; March 31, 1954, p.1; April 10, 1954, p.16; July 31, 1954 p.5; January 4, 1955, p.1; April 10, 1955, Section IV, p.3; July 15, 1955, p.1; July 17, 1955, p.1; January 17, 1956, p.1; May 5, 1956, p.1; May 19, 1956, p.1; May 20, 1956, p.1; May 24, 1956, p.12; June 24, 1956, p.1; August 3, 1956, p.9; August 5, 1956, p.37; September 1, 1956, p.7.

Role of Action-Reaction in the New Look Period

Evidence of Reaction

Re-examination of Massive Retaliation

The New Look clearly cannot be described as the direct or inevitable consequence of Soviet actions or as an emulation of Russian policy. The influence of domestic factors on the development of Eisenhower defence policy outweighed the affect of all others. Nevertheless, there is some evidence in this period of American responsiveness to or consideration of either Soviet actions and capabilities or American estimates of future Soviet actions and potential capabilities. Some degree of awareness of or 'responsiveness' to the USSR appeared in the administration's early concern over the future efficacy of massive retaliation. It was the administration's concern over the implications of the projected increase in Soviet nuclear strength coupled with the Soviet Union's already established conventional advantage which urged an early reconsideration of the massive retaliation doctrine.

Improved Air Defences

The importance attached to the defence of North American airspace during the first half of the 1950s also reflected sensitivity to Soviet actions. The evidence of Soviet progress in the development of long-range aircraft and nuclear weapons persuaded the Pentagon to provide for the possibility of air strikes against America itself. This the administration did by constructing an extensive and integrated

air defence system. However, while the new concern with air defence was fundamentally stimulated by an undeniable improvement in Soviet capabilities, it was also fuelled by estimates of operational Soviet air power (the 'bomber gap') and projections of future deployments which proved to be markedly inaccurate.(65)

Acceleration of Missile Research

While a host of domestic factors explain the origins and developmental course of American missile research, the programme was in fact significantly accelerated by reports of Soviet missile research in several official and unofficial studies, including the Von Neumann, Rand Corporation and Killian reports. The disturbing affect of these accounts was reinforced by frequent reports of Soviet missile tests. In part, as a response to this mounting evidence, President Eisenhower ordered the acceleration of ICBM research in 1955, assigning the existing Atlas project the highest national R & D priority. He further authorised work on the Titan ICBM as a backup system.(66) The President also approved the competitive development of an intermediate range weapon by the armed services and ordered intensified anti-ballistic missile research.

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(65) On the 'bomber gap', see Bottome, op. cit., pp.35-38; Colin S. Gray, describes the 'bomber gap' as resulting from the faulty western belief 'that there is a single arms race path that both adversaries must follow - a path dictated by technology and by its associated (and presumed to be common) strategic logic'. In other words, because the USA favoured the long-range bomber it was assumed that the Russians would as well, ignoring the political, technological circumstances and preferences of the USSR: Colin S. Gray, 'Predicting Arms Race Behaviour', Futures, October 1974, p.384.

(66) Armacost, op. cit., p.53.

Collective Security Systems

In its sponsorship of widespread collective security arrangements the New Look period recorded a kind of political-military 'reaction' to the American perception of the USSR (as well as Communist China) as a menacing adversary. These alliances included a NATO enlarged by the admission of West Germany - whose rearmament was itself a 'reaction' to Soviet conventional strength in Europe. Each of these alliances was concluded in an attempt to organise resistance to Communist pressure on countries located near the borders of the Soviet Union and the Peoples Republic of China.

Evidence of Domestic Factors Influencing Eisenhower Policy

The New Look's Nuclear Emphasis

The Eisenhower decision to base American defence policy on the nation's strategic nuclear capability was certainly not the direct or inevitable consequence of Soviet actions, but was instead of domestic origin. Its prime motivation was the sincere conviction that American security was seriously threatened by the potentially ruinous rate of federal expenditure, a large proportion of which was assigned to the Pentagon in general and the support of conventional forces in particular. If the country was to remain solvent the defence budget had to be restrained while somehow managing to provide for the nation's defence. This economic assessment was accompanied by the rapid development of nuclear weapons - strategic and tactical - as well as several strategic delivery systems, persuading the administration that the answer to both physical and fiscal security lay in sophisticated weapons technology. While most convenient for administration purposes, this judgement was not a facile justification for reducing general purpose forces. It rested upon the firmly held belief - entirely at

odds with Soviet thinking - that nuclear weapons had revolutionised warfare, transforming the relationship between manpower and weapons. The awesome capabilities of the new weapons were thought to have ended the long reign of ground armies, establishing massive air-nuclear strikes as the decisive factor in any future war. It was this judgement, coupled with the administration's all important economic objectives which stimulated the New Look's nuclear bias.

Dominant Role of Strategic Aviation

Similarly, the New Look's assignment of the decisive strategic mission to long-range aviation was neither dictated by the actions of the Soviet Union nor suggested by the example of Soviet doctrine. Indeed, the Soviet Long Range Air Force was accorded only a secondary status among the nation's armed forces and was never deployed at anything resembling the force levels of the Strategic Air Command. Further, from the late 1940s onwards, the USSR demonstrated a degree of interest in an alternative delivery system - the ballistic missile - which was not to be matched in the United States until the mid-1950s.

The pre-eminence of the Strategic Air Command (SAC), rather than representing a reaction to the USSR or an emulation of Soviet doctrine, was the product of the economic and technological motives which inspired the overall nuclear bias in American policy. However, while the economic objectives of the Eisenhower Administration resulted in a position of special favour for air-nuclear forces, the deep commitment to reduced defence spending extended even to SAC, which - despite the increased doctrinal role of nuclear weapons and long-range aircraft - was not increased in strength beyond the level established by the previous administration.

In addition to the concern with spending and the confidence in

nuclear power, the concentration on strategic aviation was also entirely compatible with established American doctrine and combat experience. During World War II, the United States had invested heavy responsibility in strategic bombing, emerging into the post-war period with great faith in its effectiveness. This faith was further strengthened by dramatic improvements in nuclear weapons technology and bomber performance. Finally, the airpower cause was advanced by the pressure and incluence of the Air Force itself, as well as its industrial and political allies.

Missile Research and Development

The major external stimulus to American missile research in the first half of the 1950s was a steady flow of reports telling of substantial Soviet progress in the field. However, the American programme was neither initiated in response to Soviet actions, nor closely directed by the course of Soviet research, about which relatively little was known. The development of long-range missiles in the United States was first urged by technology itself. In the early 1950s progress in nuclear and missile research convinced many that the production of IRBMs and ICBMs, armed with nuclear warheads, was an entirely feasible project. The probability that a new and highly promising strategic capability was obtainable strongly argued for its acquisition.(67) The missile programme was also spurred by the adoption of the New Look which fostered a general search for technological solutions to the nation's defence problems. With the advancement in warhead and launcher development already achieved, the production of a nuclear tipped ballistic missile qualified as a highly

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(67) Armacost, op. cit., pp.56-57, 68-69;
Schwiebart, op. cit., pp.60-64.

suitable New Look undertaking.(68)

In establishing nuclear weapons as the most important element in the nation's defence and the largest claimant on its reduced expenditures, the New Look encouraged each of the three major armed services to bid for a role in missile warfare as the most dependable means of acquiring a generous share of Pentagon spending as well as a 'decisive' strategic mission. As a result, the US Army, Air Force and Navy each became spirited and sharply competitive promoters of their own missile projects.(69) The services were also prompted to press for missile development by a Pentagon policy-making system which encouraged inter-service competition in weapons development. The Defence Department, under Charles E. Wilson, was marked by a diffusion of authority, a tendency to leave the hardware decisions to the military, rather than assert civilian leadership, and the view that technological options should not be discarded any earlier than necessary or, in other words, a belief in the wisdom of duplication in weapons development. The Budget Bureau's practice of establishing only an overall defence spending limit - leaving the armed services to determine how best to spend their allotted portions, also permitted a high degree of competition.(70)

In addition to the impetus to missile development provided by various civilian and military institutions, a significant measure of responsibility for the initiation and gradual intensification of the missile programme must be credited to a number of individuals who firmly believed in the missile as a delivery system and demonstrated

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(68) Armacost, op. cit., pp.267-270.

(69) Ibid., pp.22, 33, 38-39, 267, 268-270.

(70) Ibid., pp.72-81.

a range of technological, political and entrepreneurial talents in accomplishing the development and deployment of several missile types.(71) Trevor Gardiner, the USAF's Assistant Secretary for Research and Development, was one such individual. Gardiner played a major part in committing the Air Force and the US government to the development of an ICBM.(72)

Just as the early motivation for missile research at large stemmed from several sources, the conception of each missile system and subsequent development and deployment decisions were the result of a highly complex decision-making process involving a great many disparate factors. These factors included administration policy and priorities, Pentagon interests and organisation, the strategic and tactical doctrine of each armed service, their respective combat experience, professional skills, technological resources and generally differing strategic perspective, as well as their narrow, often conflicting, institutional interests.

Development and deployment decisions were also influenced by vigorous and widespread political lobbying in which the relative political influence of each service weighed significantly in the final

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(71) Armacost, op. cit., pp.270-271, 290.

(72) Ibid., pp.59-60, 273-274. Other examples include Professor Von Neumann whose committee accomplished a great deal in promoting the ICBM (Schwiebert, op. cit., pp.21-22), Air Force General Bernard Shriever, Commander of the Western Division of the Air Research and Development Command (Armacost, op. cit., pp.57-58), Admirals Arleigh A. Burke, William F. Raborn and Hyman Rickover, were also very effective in promoting the submarine launched missile and the nuclear submarine (Ibid., pp.67-68).

outcome. The process of lobbying and bargaining involved the Army, Navy and Air Force, as powerful interest groups in inter-service conflicts and shifting alliances under the nominal but often ineffective direction of the civilian leadership.(73) These services campaigns and promotions frequently involved lobbying by the armed services within the Department of Defence, the Executive Branch as a whole, the Congress, the political parties and the general public. The Services were assisted in their efforts by their respective advocates and supporters among the country's universities, private and semi-private research organisations, the press and the defence industries, who together extended the decision-making process on deployments over a wide spectrum of American society.(74)

The defence industries not only helped to stimulate R & D generally, but also influenced individual development and deployment decisions. In the years during and after the Second World War, the United States built a massive aircraft industry based upon government contracts. The prospect of a shift from bombers to missiles - a new complex, sophisticated, weapons type which would not likely be required in large quantities - was not initially greeted with enthusiasm by government contractors. However, with the eventual acceptance of the missile age as inevitable, the Air Force and the aviation industry were determined to manage the development and win operational control of the new weapons, minimising the role of other service contractors and the Army's in-house missile group. They therefore mustered the full range of their political and

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(73) Armacost, op. cit., pp.250-251.

(73) Ibid., pp.251-258.

economic resources behind Air Force missile projects,[75] contributing to the evolution of a less than fully objective process of decision-making on weapons development.

Tactical Nuclear Weapons

While the prospect of the USSR soon adding great air-nuclear power to its already established conventional 'superiority', helped to draw the administration's attention to the limitations of massive retaliation, the United States clearly did not choose to 'respond' to the growth of Soviet nuclear strength or to its own projections of the USSR's future nuclear deployments, in Soviet terms. Such a decision might have moved the administration to 'match' Soviet ground forces, a 'reaction' forbidden by the President's economic principles. Instead, the administration spoke of the tactical use of nuclear weapons, describing them as 'conventional', and as such, suitable as a substitute for the expanded ground armies which would have represented a direct, emulative 'reaction' to the Soviet Union but which would have violated the administration's self-imposed budgetary strictures.

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(75) Armacost, op. cit., pp.153-155; Assessing the influence of industry on weapon deployment, General James Gavin wrote: 'Industry can make extravagant claims for their products and convince Congress of the accuracy of these claims, even though they are not valid. If a service will go along with industry it means an increased budget and money to spend, sometimes on things not directly associated with the industry - supported product. It is difficult for a service to resist pressures since by going along they can rationalise their position in terms of the overall good that can be accomplished with more money. The amount of money that is spent on nation-wide advertising, by industry, for hardware that is obsolete, is sizeable, and the pressure that industry can place through lobbies in terms of employment, payrolls and effect upon constituents is impressive to Congress. Finally, when such forces come into play in the committee system that presently characterises the decision-making process of the Department of Defence, they can become very harmful. It is at this stage that they assume the appearance of inter-service differences although fundamentally, the problem is an industrial and not a service one. This gets to the heart and soul of a type of competition that leads to results that are, at times, alarming'. Gavin, op. cit., p.243.

Manpower Reserve System

Yet another feature of New Look policy which reflected the desire to produce an economical alternative to active ground forces was the programme for improving military manpower reserves. Opposed by allegedly superior conventional armies, the administration refused to 'react' in the manner urged by many senior Army commanders. It instead chose to spare the US Treasury the expense of large active forces by creating only an expanded pool of reserve manpower. Economy once again prevailed over the apparent demands of direct action and reaction.

Consistency of Eisenhower Policy

The strong influence of domestic priorities generally and the critical importance of economics in particular on Eisenhower defence policy is revealed in the administration's record of consistent dedication to reduced defence spending, diminished military defence spending, manpower levels and a heavily nuclear bias in American strategy. Despite the disturbing Korean War experience, the Communist victory in Indo-China, the growing air-nuclear capabilities of the USSR, alarming assessments of Soviet nuclear potential, reports of a 'bomber gap' and a Soviet lead in missile development, as well as continuing Soviet conventional superiority, the administration firmly held to its original economic and strategic convictions throughout President Eisenhower's tenure. In the face of what might have proven sharply arousing external stimuli the United States government remained committed to economy in defence expenditure and firmly convinced of the adequacy of its nuclear strategy.

Deterrence and the New Look

The New Look did not mark a radical revolution in American strategic doctrine or operational planning. Nevertheless, the New Look brought a major advance in the nation's commitment to the concept of deterrence. The years 1945-1953 traced a gradual expansion in the role of nuclear weapons in US strategy and the emergence of the deterrence concept. However, the mobilisation tradition remained alive in the minds of senior military commanders and in the policy of the Truman Administration. Beyond arming to deter or to wage a full-scale nuclear conflict, the United States - at least in theory - was still preparing to conduct a major ground war with relatively large active forces supported by an extensive mobilisation system. With the adoption of the New Look, the Eisenhower Administration discarded most of the Truman remnants of mobilisation. Although the New Look established the improvement of manpower reserves as one of its objectives, this was done in an attempt to avoid the maintenance of high levels of active manpower and not in an effort to develop a broad mobilisation base. Largely departing from the mobilisation tradition, the New Look placed heavy emphasis on nuclear forces-in-being generally and the concept of strategic nuclear deterrence in particular. While the idea of preparing to wage and win any future war was certainly not abandoned, by the mid-1950s the first priority of American policy was to support a strategy of deterrence through the permanent maintenance of massive nuclear strike forces constantly prepared to retaliate against any enemy. Conventional forces were, of course, preserved but reduced in size and strategic significance. Further, the very meaning of 'conventional' was now taken to include nuclear weapons of the tactical variety. Tactical nuclear weapons

were to assist in deterring conflicts below the full-scale nuclear level, as well as to fill the breach left by the diminished numbers of ground troops in the event of a major 'conventional conflict. In short, under the New Look, the United States completed the move to the concept of deterrence through nuclear power.

Little of the credit for this significant development in American policy can be awarded to the Soviet Union. Although the armed forces deployed under the New Look were intended primarily to deter, or if need be, to defeat the USSR, beyond the underlying Soviet presence in the mind of policy-makers as a formidable adversary, the Soviet Union exerted little direct influence on the general character or specific design of Eisenhower strategy. Indeed, had the administration been prepared to honour fully its obligations under the rules of 'action-reaction', the United States might have 'reacted' to the allegedly rapid growth of the USSR as both a major nuclear and conventional military power by launching a build-up in American general purpose forces. Instead, it implemented a strategy with a sharply divergent emphasis.

The New Look's overall nuclear bias and its commitment to nuclear deterrence, rather than representing a direct response to Soviet actions, was in fact, largely stimulated by the administration's economic objectives and technological-strategic judgements. The New Look's nuclear bias was largely motivated by the judgement that America's overall security could not be assured without balanced budgets and that balanced budgets could only be achieved by deploying 'unbalanced' forces in which the burden of American defence would rest upon nuclear power.

The economic and technological motives which prompted the general shift to nuclear weapons in American defence policy were also those which inspired the adoption of the deterrence concept. Any strategy preserving the mobilisation tradition was unacceptable to the New Look's authors, if only because the expense of maintaining a broadly based mobilisation system would have seriously violated the administration's fundamental commitment to cutting defence costs.

Beyond the economic factor, the final move to deterrence was also strongly recommended by the very capabilities and implications of air-nuclear technology which had originally suggested deterrence to the Truman Administration. It was becoming increasingly apparent that both the level of destruction of which nuclear weapons were capable and the speed of their delivery had changed the nature of warfare and significantly affected the role of the armed services. During a period in which nuclear weapons could decisively smash an opponent within a matter of days the age of lengthy general mobilisations had clearly passed.

Further, the estimated consequences of a massive nuclear exchange strongly proposed successful deterrence as the first - although by no means the exclusive - responsibility of the nation's strategic forces. In short, without the stimulus of Soviet actions, the nature of nuclear weapons as revealed to the Americans in the development of their own strategic systems, powerfully - if not irresistibly - argued against mobilisation and for deterrence. In any case, deterrence was clearly not suggested by the example of Soviet strategic doctrine; as the Soviet Union still engaged in shaking off the rigid doctrinal orthodoxy of the post-war Stalin period, was only just beginning to consider and debate the deterrence concept.

Chapter 2

The Post-Stalin Debate and
The Emergence of Soviet 'Deterrence'

The Post-Stalin Debate

The Decline of Stalinist Military Science

Throughout the early post-war years, Soviet strategic doctrine was rigidly cast in the mould of 'Stalinist Military Science', freezing Soviet strategy in its World War II form. While Russian plans for pouring vast conventional forces into western Europe in response to an atomic attack may not have been unrealistic in the late 1940s, with the expansion of America's air- nuclear power Stalinist strategy was becoming dangerously outmoded. The reform of Soviet doctrine has become an unavoidable and urgent necessity.(1)

The opportunity for reform appeared in March of 1953 with the death of Stalin. Almost immediately after Stalin's death the armed services began the lengthy process of 'de-Stalinisation', opening a debate on the validity of their former leader's strategic thought. This re-examination was begun by Major General N.A. Talenskii in a September 1953 article, 'On the Question of the Laws of Military Science'.(2) General Talenskii, for the first time in the Soviet press, expressed the view that the so-called 'permanently operating factors' were not, in fact, a fundamental and universal law of war. The five factors did not represent absolute truths which could be thoughtlessly applied in every conflict.(3) Talenskii continued to laud Stalin's five factors as highly significant but presented his own statement of the basic law of war, describing military victory as fundamentally the product of 'successive blows accumulating in force', 'the superiority in the permanent factors', and 'a

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(1) H.S. Dinerstein, War and the Soviet Union. New York: F.A. Praeger, 1962, pp.178-179.

(2) Ibid., p.37.

(3) Ibid., p.9.

comprehensive exploitation of the economic, morale-political and military potentialities in their unity and interactions'.(4)

Talenskii's modification of orthodox Stalinist doctrine also included the observation that the laws or rules of warfare applied, equally to both socialist and imperialist forces. In other words, while western leaders could not draw upon the moral force of their peoples, the rules of battle were the same for both sides.(5) Talenskii also cautioned that the USSR's superior social system provided no automatic guarantee of victory. In every conflict the Soviet Union would have to fight with skill and courage in order to defeat imperialism. Any complacent expectation of inevitable victory might well bring defeat.(6)

Although challenged within the Soviet armed forces, the strategic review which General Talenskii began only months after Stalin's death had changed the doctrinal environment, greatly reducing the significance of the permanently operating factors. By 1955 the General's originally rather radical views had become respectable.(7) In that year, General P.A. Rotmistrov delivered the first public revision of the 'permanently operating factors'. While acknowledging that careful observations of the five principles was necessary for victory, he denied that they represented the sum total of strategic wisdom, eliminating the need for any further thought. He joined Talenskii in warning that Russia could not rely on any automatic victories, neither could she rest secure in the belief that imperialist commanders did not understand the 'permanent factors'.(8)

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(4) Dinerstein, op. cit., p.39.
(5) Ibid., pp.39-40.
(6) Ibid., p.75.
(7) Ibid., pp.61-63.
(8) Ibid., pp.49-51.

By 1955 Stalin's laws had not only lost their position as the key to all future victories, but the very idea of discovering any final principles was refuted by the editors of the journal Military Thought, (Voennaia mysl), explaining: '... it is not yet possible to propound any final and definite formulation of the basic law'.(9) With the need for public worship of the 'permanent factors' at an end, the discussion of defence issues could be conducted in an atmosphere of relative freedom. Writers on strategy could refrain from including the ritual statements of inevitable Soviet victory, as well as formal disparagements of western strategic primitivism.(10) They could now belatedly proceed with a much more uninhibited study of modern warfare and the USSR's defence requirements than Stalin had been willing to tolerate.

Although the efforts of General Talenskii and others to break the calcifying grip of the permanent factors on military strategy met with considerable success, the five factors were not completely discarded. They were no longer cast as the sacred sum total of strategic wisdom, but the decisive role of Stalin's principles was, nevertheless, frequently asserted in the military press during the first two years after Stalin's death.(11) However, from approximately 1956-1959 the permanent factors thesis as expressed in its Stalinist form, largely disappeared, although surviving in essence through a continued emphasis on the importance of the full range of political, economic, morale and military factors in the achievement of victory.(12)

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(9) Dinerstein, op. cit., p.61.

(10) Ibid., p.62.

(11) R.L. Garthoff, The Soviet Image of Future War. Washington, D.C.: Public Affairs Press, 1959, p.32.

(12) Ibid., p.31.

In short, although the 'permanently operating factors' were still frequently accorded great public respect, the thaw in Soviet military doctrine opened a re-examination of military strategy which by 1955 dislodged the 'permanent factors' from their status as infallible scripture. At the close of the decade the process of revision had largely removed the five principles from military discussion in Stalinist terms; although they continued to influence the character of Soviet strategic doctrine. Only the paralysing dogmatism of earlier times had been completely rejected.

The dethronement of the 'permanently operating factors' had a number of affects on Soviet military thought. Two of the most significant were the re-assessment of surprise attack in modern warfare and the reappraisal of air-nuclear power. During the post-war Stalin years, surprise attack was usually described as an important but indecisive influence on the outcome of a future war. However, the death of the wartime leader brought a re-examination of the contribution of surprise to victory. The post-Stalin review of surprise seems to have begun in the autumn of 1953 with the publication in Military Thought of an article by General Talenskii in which the General explained:

> It is well known that the influence of surprise on the course of military operations can be significant. But as a result of the correct actions of a commander, the effect of an enemy surprise attack can be to a greater or lesser degree paralysed by a system of measures, worked out by Soviet military science, in particular a system of operational and tactical security, and by high vigilance and combat preparedness of the troops, etc. (13)

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(13) Garthoff, op. cit., p.62.

Talenskii expected that future wars would be lengthy struggles, but did not 'exclude the possibility of a decisive defeat in a limited time of one or another opponent, given the existence of certain conditions'. While victory is the product of many battles, the General acknowledged: '... perhaps in certain conditions and situations it will even be possible to win a strategic operation without recourse to consecutive operations'.(14)

In October of 1953, Military Thought followed Talenskii's views with an argument new to Soviet military doctrine; Colonel Nenakhov wrote:

> Under current conditions, the danger of surprise attack by the aggressors has not only not declined, but on the contrary, has become still more sharp. What causes this? Above all, the appearance of new forms of armament of enormous destructive and devastating action which in the hands of the aggressors, are a most dangerous means of attack, capable of bringing innumerable calamities to peace-loving people. This concerns similarly the development of aviation and other forms of military technology and delivery means ...
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> Surprise of attack, of course, was and remains a transitory factor not deciding the fate of wars. However, as is well known from the experience of the war, surprise can bring great advantage to the aggressor and enormous loss to the victim of the attack. It would hence be unforgivable not to take account of this factor and to underestimate it. (15)

In 1954 the military press generally continued to stress on the primacy of the permanent factors while, nevertheless, acknowledging that the course and outcome of a future war could be determined by a surprise nuclear attack in certain circumstances. Any such apparent contradiction was resolved to Soviet satisfaction by the contention that adequate defences would cost the enemy the advantage of

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(14) Dinerstein, op. cit., p.44.

(15) Garthoff, op. cit., pp.61-62.

surprise.(16) The gradual process of doctrinal revision had, by 1954, moderately increased the roles of surprise without revolutionising the official views on this issue. The 'permanently operating factors' remained decisive. Although, in the words of General N. Pukhovskii; '... with the development of military technology and the employment of new means of destruction, the surprise element acquired even more significance than it had in past wars',(17) surprise remained a secondary influence.

In 1955, a major advance was made in the doctrinal status of surprise attack beginning with an article in the February 3 issue of Military Thought entitled, 'On the Role of Surprise in Contemporary War' by Marshal Rotmistrov. Marshal Rotmistrov wrote:

> Surprise attack with the employment of atomic and hydrogen weapons and other contemporary weapons now assumes new forms, and is capable of leading to significantly greater results than in the past war. One may frankly say that under the circumstances of the use of atomic and hydrogen weapons, surprise is one of the decisive conditions, for achievement of success not only in battles and operations, but even in wars as a whole. In certain cases, surprise attack with the mass use of new weapons can provoke the quick collapse of a state whose capability for resistance is low as a consequence of the basic failure of its social and economic structure and also for an unfavourable geographic location. (18)

More than simply enlarging the recognised significance of surprise, Rotmistrov also argued that simple retaliation against such an assault was an inadequate response. A 'pre-emptive' or 'forestalling' strike was required:

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(16) Dinerstein, op. cit., p.183.

(17) Ibid., p.182.

(18) Garthoff, op. cit., pp.64-65.

> ... since too often in past history aggressors have used surprise attacks on other states, we cannot ignore these lessons of history and we must always be ready for pre-emptive action against the cunning of aggressors .... The duty of the Soviet armed forces is to not permit surprise attack of the enemy on our country, and in case an attempt is made, not only to repulse the attack successfully, but also to deal to the enemy simultaneous blows or even pre-emptive surprise blows of terrible crushing power. For this the Soviet army and navy have everything that is necessary. (19)

While Rotmistrov was arguing for a pre-emptive capability, he made clear that he was not endorsing preventive war. He cautioned: 'Striving to seize and hold the strategic initiative must not be understood as intention to start a preventive war against the enemies of the USSR who are preparing to attack us'.(20) No fewer than forty-eight statements appeared in the Soviet military press during 1955 which followed Rotmistrov in reflecting the changing view of surprise and pre-emption.(21) However, despite his pioneering opinions on the surprise-pre-emption issue, Rotmistrov warned against an over-emphasis on surprise saying: 'Surprise cannot, however, yield a conclusive result, cannot bring victory in a war with a serious and strong enemy'.(22) Surprise was not to be regarded as essential for victory. It was only necessary to take full account of its affect on the early stages of a war.(23)

Intimately linked with the re-assessment of surprise attack in Soviet doctrine was the re-evaluation of the significance of nuclear

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(19) Garthoff, op. cit., p.65.
(20) Ibid., p.66.
(21) Ibid., p.67.
(22) Ibid., p.74.
(23) Dinerstein, op. cit., p.186.

weapons. In the post-war Stalin period, atomic weapons were not thought to have fundamentally altered the nature of modern warfare. However, in the early years after Stalin's death, deepening Soviet insight into the new weapons technology and the growth of American air-nuclear power compelled a change in the attitude to nuclear power. From at least 1955, the Soviet Union acknowledged the great significance of nuclear weapons and set about planning for the conduct of a major nuclear war.(24)

The increased respect accorded to surprise attack and nuclear weapons also resulted in the gradually improved status of air power. Immediately after the Second World War, the Russians concluded that strategic bombing had contributed relatively little to the defeat of Germany, an assessment which seems to have largely persisted until the middle of the 1950s.(25) However, in 1954 an indication of a shift in attitude towards strategic bombing appeared in articles on air defence. A Red Star article by Col. G. Fedorov in January of 1954 spoke of 'numerous and destructive bombings by enemy aircraft', in a future war. In the following year, Fedorov explained that bombing had brought '... great difficulties and deprivations'.(26) A colleague also described the conduct of offensive and defensive strategic operations as representing a new military discipline.(27)

In January of 1955 there was evidence of a significant re-evaluation of strategic aviation. In that year the Air Force journal (Vestnik vozdushnogo flota) discussed the tactical use of nuclear weapons and judged the bomber to be the best available

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(24) Dinerstein, op. cit., p.215.
(25) Ibid., p.230.
(26) Ibid,, p.240.
(27) Ibid.

delivery system. Later in the year, mention was made of the use of aircraft for relatively long-range atomic strikes. It was not, however, until 1957 that the major role of air power was clearly established.(28)

The much improved status of strategic aviation was accompanied by positive assessments of the capabilities of long and intermediate range missiles. As early as 1947, Stalin decided to develop an intercontinental strike capability based upon ballistic missiles as well as aircraft. Developmental work proceeded from the late 1940s into the post-Stalin era with considerable intensity; but it was not until 1956 that the Soviet press began to publish highly admiring articles on the topic of ballistic missiles. By 1956 military authors spoke of the balanced development of air-power including both manned bombers and missiles.(29)

With the new awareness of surprise attack and air-nuclear power, there was also a consequent upsurge in the importance attached to both air defence and civil defence. While air defence had been regarded as a mission of importance in Stalin's time, it was perhaps not given the weight which the post-Stalin appreciation of nuclear weapons and surprise attack was eventually to bring. In early 1955, the press began to discuss the necessity of active air defence in a period when only a very few aircraft could cause terrible destruction. Whereas in the past the interception of a large number of enemy aircraft could be regarded as satisfactory, the new weapons technology

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(28) Dinerstein, op. cit., pp.230-232.

(29) Ibid., p.232.

demanded the destruction of all attacking planes.(30)

The grave threat of nuclear attack also inspired a keen interest in civil defence. In the immediate post-Stalin years, an important programme was initiated to educate the public on civil defence in a nuclear war. Millions of pamphlets were printed in the latter half of the 1950s explaining the affects of nuclear weapons and recommending measures designed to protect the civilian population.(31)

The Malenkov-Khrushchev Contest

During the years 1953-1955, as the Soviet military was carrying out a re-examination of strategy, the political leadership was engaged in a struggle to determine the post-Stalin succession, a contest which involved a number of differences over the impact of nuclear weapons on Soviet security and the USSR's defence requirements.

Assessing the implications of modern weapons technology, G.M. Malenkov, Chairman of the Council of Ministers, concluded that the tremendous power of nuclear weapons would make any future war a terrible disaster for both socialist and imperialist countries.(32) The use of military force had become a means to no rational end. Malenkov spoke of a third world war as '... a new world holocaust, which, with the present means of warfare, means the destruction of world civilisation'.(33) Echoing Malenkov's views, the government newspaper Izvestia wrote approvingly of President Eisenhower's

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(30) Dinerstein, op. cit., pp.238-239.

(31) Ibid., p.243.

(32) A.L. Horelick and M. Rush, Strategic Power and Soviet Foreign Policy. Chicago: University of Chicago Press, 1966, p.19.

(33) Dinerstein, op. cit., p.102.

December 1953 warning that, despite America's nuclear power, a Soviet-American conflict offered: '... the probability of civilisation destroyed ... and the condemnation of mankind to begin all over again the age-old struggle upward from savagery'.(34) The Izvestia article 'agreed completely with the appraisal of the danger contained in present-day atomic weapons which was expressed by Eisenhower'.(35) Alluding to America's new post-war vulnerability, the article explained:

> The post-war development of the technical facilities of warfare has advanced so far that now the ocean is no longer a reliable protection against blows in war. The contemporary development of aviation, missiles and the submarine fleet make it possible to deal crushing blows across a distance of many thousands of kilometers. Why, there are already appearing even in the American press sufficient admissions of the fact that the age of invulnerability of overseas states is a thing of the past. (36)

While an atomic war promised horrific disaster, warfare took on a suicidal aspect with the development of the hydrogen bomb by both the USA and the USSR. In Malenkov's view, this great new weapon assured the obliteration of all combatants. However, in the Premier's opinion the shattering power of the H-bomb, although posing the danger of a devastating American assault, also provided the Soviet Union with a reliable guarantee against an American attack.(37) Indeed, the staggering power of nuclear weapons was thought to have modified the Marxist doctrine on the inevitability of war between capitalist and communist states. In 1953 the Soviet writer M. Gus explained:

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(34) Dinerstein, op. cit., p.69.
(35) Ibid.,
(36) Ibid., p.70.
(37) Ibid., p.18.

> Experience has shown and proved that we are in a position to prevent war, and to paralyse the action of this law (of the inevitability of war). As one bourgeois radio commentator expressed it, in previous years people looked at their calendars anxiously as the pages came nearer and nearer to August, the classic month for the beginning of world wars, but in 1953, for the first time, people drew an easy breath in the certainty that such an obvious threat of war had significantly reduced this year, and had considerably receded. (38)

Expressing a similarly confident view on the diminishing likelihood of war, M.I. Mikoian declared:

> The danger of war has receded to a large extent in connection with the fact that we now have not only the atomic but also the hydrogen bomb ...
>
> In the course of the last four or five years, the ruling circles of the USA have declined negotiations with the Soviet Union, while trying to convince public opinion that these negotiations were useless and that it was not even worthwhile to initiate them. It is quite instructive therefore, that after the Soviet Union made the hydrogen bomb, and it is not yet known whether the United States of America has such a bomb, the government of the United States of America proposed to the Soviet Union the initiation of negotiations on questions of atomic energy. (39)

In March of 1954, Mikoian apparently joined Malenkov in the belief that Russia's then current atomic forces provided the USSR with a 'deterrent' capability.(40)

The power of nuclear weapons was evidently to be relied upon to convert the imperialists to the ways of peace. Malenkov's apparent confidence in the then rather meagre Soviet nuclear capability, probably rested upon a strategic concept later described in the west

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(38) Dinerstein, op. cit., p.67.

(39) Ibid., p.71.

(40) Ibid., pp.15, 101.

as 'minimum deterrence' or the deployment of a small nuclear force in an effort to dissuade a potential enemy from attack.(41)

Believing that nuclear weapons had both greatly increased the destructiveness of war, as well as positively contributing to Soviet security, those of Malenkov's persuasion insisted that it was 'necessary and possible' to adopt a policy of peaceful co-existence.(42) Nuclear weapons had made war appear unattractive to the imperialists; but the terrible capabilities of the new weapons nevertheless demanded that the strongest possible guarantees against conflict be established. Steps had to be taken to end the Cold War. In the words of the Soviet Premier:

> It is not true that mankind faces a choice between just two possibilities: either a new world holocaust or the so-called cold war. The peoples (of the world) are vitally interested in a firm consolidation of peace. The Soviet government stands for further relaxation of international tension, for a firm and lasting peace and resolutely opposes the policy of cold war for this policy is a policy of preparation for a new world holocaust which, with the present means of warfare, means the destruction of world civilisation. (43)

In other words, Malenkov seemed to be implying the possibility of a new and ideologically rather unorthodox relationship of long-term accommodation with the west.(44)

The development of nuclear weapons was also thought to provide a means of reducing defence expensitures. As only a relatively small number of bombs could accomplish damage levels which would previously have required years to achieve, it was possible to assure

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(41) Horelick and Rush, op. cit., p.19.

(42) Ibid., p.26.

(43) Dinerstein, op. cit., pp.101-102.

(44) Ibid., p.102.

Soviet security with relatively small strategic forces, freeing substantial resources for investment in the civilian economy. The opportunity had finally arrived for substantially improving the Soviet standard of living through the further development of light industry.(45) In August of 1953, Malenkov explained that the period of intense concentration on heavy industry had passed and a new period had begun.(46) It was now possible to correct what one economist described as: 'a certain backwardness in the production of goods in popular demand ...'.(47)

Underlying much of the defence debate in the post-Stalin leadership contest was a basic difference over the implications of nuclear weaponry for Soviet security. While those represented by Malenkov argued that the new technology had improved Soviet security, reducing the danger of an American attack, those in accord with Party Chairman N.S. Khrushchev and Defence Minister Nicholai Bulganin took a directly opposing view. Far from being able to rest securely behind Malenkiv's 'deterrence' concept and minimal nuclear forces, Khrushchev argued that the effect of nuclear weapons was, in fact, ambivalent. Their awesome power could serve to caution the imperialists against aggression; but that same power might also tempt the United States to resolve the east-west struggle through a surprise attack. As a result, in March of 1954, Bulganin departed from the traditional Stalinist view of surprise as a secondary factor, warning of the growing danger of a surprise nuclear attack. Unlike the more optimistic Malenkov assessment, Bulganin felt that the increasing threat of surprise posed by the hydrogen bomb had

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(45) Dinerstein, op. cit., p.18.

(46) Ibid., p.142.

(47) Ibid., p.141.

diminished Soviet security.[48] With surprise now more tempting than ever, nuclear weapons could hardly be said to have reduced the likelihood of war. The danger of war was also said to remain high as a result of the unchanging nature of capitalism. Khrushchev advised:

> The Communist Party and the Soviet government cannot but realise that there are reactionary forces in capitalist countries which seek to find a solution to their economic difficulties and the exacerbated contradictions of the imperialist camp by the preparation of a new war. (49)

V.M. Molotov observed that it was 'impossible not to take into account that before everyone's eyes the policy of the preparation of a new war is being carried out by the reactionary forces ...'.[50] The Khrushchev faction warned that estimates of nuclear damage levels and a reasonable Soviet attitude could do nothing to eliminate the aggressive plans of the imperialists, ambitions which were determined by the very nature of capitalism and the laws of history. In support of their ominous views, Khrushchev and his colleagues pointed to a number of developments abroad. Among the most disturbing of these was the Dulles doctrine of 'massive retaliation', a policy which Pravda explained meant:

> The United States intended in case of any local conflict, wherever it happened, to begin military operations where they pleased and against whom they pleased, using all kinds of weapons, including atomic bombs. (51)

Such a policy implied an American intention to exploit local wars as a means of triggering more serious conflicts.[52] The then current Indo-China crisis was regarded apprehensively as an opportunity for

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(48) Horelick and Rush, op. cit., pp.22-24.

(49) Dinerstein, op. cit., p.103.

(50) Ibid.

(51) Ibid., p.108.

(52) Ibid., p.110.

the implementation of the highly dangerous Dulles doctrine.(53) In any case, the openly declared American attachment to retaliation 'instantly by means and at places of our own choosing' was not considered to be the policy of a fully rational state. Far from accepting the reasonable quality of American policy, Khrushchev questioned the very sanity of the American Secretary of State.(54) The more alarmist Khrushchev school also pointed to the beginning of German rearmament as yet another sign of western disinterest in peace. This programme was thought to be a step in the west's preparation for the final clash between the capitalist and Communist world's which the imperialists would initiate in a last futile attempt to resist the laws of history.(55)

In such circumstances, with the United States publicly committed to relying upon its nuclear forces, the Khrushchev group found itself unable to place its confidence in any strategy of 'deterrence'. Indeed, the Premier's faith in the adequacy of the Soviet 'deterrent', as well as his grim expectation of the consequences of a nuclear war, were condemned as both complacent and defeatist, lulling the Soviet people into dangerous apathy. The idea of peace through 'mutual deterrence' was described as a capitalist slogan designed to afflict the Russians with a false sense of security. In his prediction of 'the destruction of world civilisation' as a result of nuclear war, Malenkov had foolishly dismissed any possibility of the USSR winning or seemingly even surviving such a conflict. The Khrushchev group accepted that an

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(53) Dinerstein, op. cit., p.110.
(54) Ibid., p.113.
(55) Ibid., p.126.

American nuclear attack would bring great destruction to the Soviet Union; but they disputed the suggestion that a nuclear exchange would mean complete disaster for both sides. This argument was a capitalist deception intended to dull Soviet vigilance, and propagate the notion that resistance to an American attack was pointless. In response, the Khrushchev faction assured the Soviet people that a general war threatened the collapse of only the capitalist system.(56)

In a time when the inherently aggressive nature of capitalism was made still more dangerous by the terrible power of modern technology, and the irrational and unreasonable quality of American policy, the Soviet Union could not afford the delusion of 'mutual deterrence' as a guarantee of peace. Sharing the globe with a powerful aggressive and unpredictable opponent, the USSR must recognise that: 'at any moment ... mankind might be faced with the accomplished fact of the beginning of a destructive atomic war'.(57) In such circumstances, it was hardly sensible to speak of reducing the nation's defence burden or devoting larger resources to the civilian sector of the economy. On the contrary, Khrushchev and his associates argued for a still greater commitment to the armed forces and heavy industry. Bulganin explained that the USSR had to increase her military power as the west was not planning for 'mutual deterrence', but for war with the Soviet Union.(58) Bulganin warned in November of 1954: 'So far no changes have taken place in the international situation which would give us grounds for reducing our attention in any degree to the question of strengthening our

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(56) Dinerstein, op. cit., pp.23, 75-77.
(57) Ibid., p.141
(58) Ibid., pp.104-105.

defensive capabilities'.(59) Additional strength was required for defence as well as to strengthen the Soviet position in talks with the west.(60) On the light versus heavy industry question, Pravda explained:

> ... while carrying out the programme of the further improvement of all branches of the socialist economy and the programme of the systematic improvement of the material welfare of the people, the party will push heavy industry forward above everything else and unswervingly. (61)

A Pravda editorial also argued:

> 'The growth of heavy industry is the basis for the further development of the whole economy and the guarantee of the inviolability of the borders of our motherland ...'. (62)

Those advocating a higher investment in light industry were described as 'pseudo-economists' by Pravda's editor, Dimitri Shepilov.(63) He further argued:

> 'Stalin showed more than once that in the face of capitalist encirclement we cannot halt the tempo of the forward movement of heavy industry .... To hold it back means to fall back; and the backward are beaten'. (64)

The leadership contest eventually brought victory to Khrushchev and his colleagues. During 1954 Malenkov's public statements slowly traced a retreat from his earlier views on 'nuclear deterrence' and Soviet-American relations. The Premier was gradually separated from his sources of support until he was compelled to resign as Chairman of the Council of Ministers on February 8, 1955.(65)

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(59) Dinerstein, op. cit., pp.119-120.
(60) Ibid., p.116
(61) Ibid., p.139.
(62) Ibid.
(63) Ibid., p.142.
(64) Ibid.
(65) Ibid., pp.73-75; 112-114; 116-117; 128.

Khrushchev and Bulganin : 1955-1957

With the resignation of Malenkov, the Khrushchev-Bulganin team came to power as the opponents of a 'deterrence' emphasis in defence policy and the prophets of an American nuclear attack. The USSR was not to risk its survival on the deterrent affect of the country's still meagre nuclear forces, but was to develop a 'war-winning' capability. As part of this new strategy and in recognition of the new importance of surprise attack, the Soviet Union was to develop the capability to deliver a pre-emptive strike. Pre-emption would limit the USSR's losses and favourably influence the outcome of the war.(66) In pursuit of these goals, Khrushchev and Bulganin presided over an increase in the Soviet Union's military power. However, the period 1955-1957 was also marked by an apparent reversal of their earlier attitudes on the likelihood of war.

Almost immediately after the defeat of Malenkov, Khrushchev and Bulganin shifted their position on the likelihood of war, reflecting far less concern over the danger of an American attack.(67) Following rapidly on Bulganin's succession as Premier, the new leadership acted to improve the USSR's foreign relations, moves not entirely consistent with a highly pessimistic view of the world situation. In 1955 a settlement was reached with Austria, Soviet troops were withdrawn from that country and Mr. Khrushchev met with the American President at the Big Four Summit Conference in Geneva. Against the background of these positive steps toward accommodation,

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(66) Dinerstein, op. cit., pp.24-25.

(67) Ibid., p.95.

the official Soviet view of the prospect for peace improved considerably. Indeed, the change in the Soviet world view and the degree to which the earlier alarmist position may have been related to the struggle with Malenkov, was clarified at the Supreme Soviet session which received Malenkov's resignation. On that occasion, Molotov told the legislature of the weakness and constraints afflicting the new Republican leadership in Washington, adopting a tone markedly different from earlier fears of an American attack.(68)

The Party Chief's changing views were reflected in his modification of the Marxist principle on the inevitability of war with imperialism. Khrushchev reminded the Twentieth Party Congress, in February of 1956, that when the dictum on the inevitability of war was first issued, imperialism controlled the entire globe. However, by the mid-1950s, Capitalism had been greatly weakened by Socialist victories in the USSR and in many other countries around the world. These victories and the military power which they placed in the hands of peace-loving peoples, forced the west to recognise the impossibility of a successful attack on the USSR. The continued existence of Capitalism preserved the danger of war but the reality of Soviet power meant that there was 'no fatal inevitability of wars'.(69) The nature of the capitalist system had not changed, requiring the Soviet Union to keep its military guard as high as possible. However, the danger of nuclear devastation facing all nations, as well as the strength of the Socialist world generally, compelled the more rational western elements to recognise

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(68) Dinerstein, p.145.

(69) Ibid., p.80.

the terrible risks of another great war.(70) As well as detecting a reduced danger of an American attack in 1956, Khrushchev also modified his views on the likely consequences of a nuclear war, seeming to move more closely to Malenkov's dire warnings. In April of 1958 his estimates of war damage went so far as to include the 'annihilation of all life on earth'.(71)

However, in early 1957 Khrushchev again shifted his view on the probability of war. It was now once again argued that, despite the great increase in Soviet military power, many American leaders were determined to discover some means of launching a nuclear war without suffering retaliation.(72) In January of 1957, a Chinese-Soviet declaration included the first charge of America's violent intentions for two years. It warned: All the peace-loving nations of the globe should be constantly vigilant and prepared for a persistent and prolonged struggle with the camp headed by the United States', in view of the American 'policy of aggression and preparation for war'.(73) On March 18, a Pravda article pointed out that, while war was no longer inevitable, 'Capitalism has been, remains and in the future will be, the source of threats of aggression and war'.(74) Capitalism's obvious decline might well prompt the west to violent stop-gap measures. During the first half of 1957 the Party Chairman spoke of the real danger of war resulting from American miscalculation or accident. Speaking of the threat of war, Khrushchev told the New York Times in May of 1957:

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(70) Dinerstein, op. cit., pp.80-82.
(71) Ibid., p.79.
(72) Ibid., p.84.
(73) Ibid., p.155.
(74) Ibid., p.159.

> In this connection it should be realised that, given the existence of atomic and hydrogen arms and given the existence of rocket technology and inter-continental missiles, it is not to be excluded that a war can be unleashed as a result of some kind of fatal error, which will lead to untold tragedy for the peoples, not only of our two countries, but for the peoples of the whole world. (75)

On the question of whether the future would bring war or peace, Khrushchev explained: 'It is hard, I repeat, to say in which direction the scales will tip'.(76)

In a May interview, he denied that nuclear weapons might assure world peace and also advised:

> We do not want to be like the lamb, defenceless before the wolf. Both the lamb and the wolf live on the same earth. But by the right of might, the wolf eats the lamb. We want to have fangs so that the wolf knows that an attack on the peace-loving cannot be carried out with impunity. The wolves may lose their skins and, perhaps even worse, their heads. (77)

Post-Stalin Strategic Doctrine and Policy

General Purpose Forces

Ground Forces

By the middle of the 1950s the Russians continued to describe the ground forces as: 'The main element of the armed forces ...'.(78) Indeed, the nuclear age was occasionally said to require larger ground armies than before,(79) increased in mobility, manoeuvre, fire power and reconnaissance capability. These requirements were thought to have increased the importance of both armoured and airborne forces.(80)

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(75) Dinerstein, op. cit., p.84.

(76) Ibid., p.85.

(77) Ibid., p.87.

(78) R.L. Garthoff, Soviet Strategy in the Nuclear Age. London: Atlantic Books, 1958, p.151.

(79) Ibid., p.154.

(80) Ibid., pp.149-166.

While Khrushchev's policy in the mid-1950s was marked by a reduction in the overall level of military manpower, these cuts did not appear to affect Army strength seriously.(81) As manpower levels were being reduced the Army was re-organised and modernised in an effort to improve its fire power and mobility. The ground forces were extensively motorised, air transport expanded and modern weapons delivered to Army units.(82)

The Army was also trained in the conduct of its operations under atomic attack. Articles on the topic appeared in the military press. Manuals on atomic warfare were written, atomic manoeuvres practised and changes in operational procedures and tactics considered. By 1955 training for atomic warfare had become a regular feature of Army training and Soviet tactical atomic weapons had been developed. The atomic nuclear emphasis

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(81) From 1955 to 1957 the USSR announced the dissolution of '63 divisions and independent brigades' but did not identify the number of combat divisions affected. (T.W. Wolfe, Soviet Power and Europe, 1945-1970. Baltimore: The Johns Hopkins Press, 1970, pp.164-165). In 1955 and 1956 it was claimed that total armed forces manpower had been cut by 184,000. Premier Khrushchev was later to assert that the overall level of armed forces manpower from 1955 to 1958 had been reduced from 5,763,000 to 3,623,000. (Michael P. Gehlen, The Politics of Co-existence. Bloomington, Ind.: Indiana University Press, 1967, p.71). While a reduction to something like 1947 levels was probably achieved, western sources reported no decline in the number of divisions. Those cuts which were carried out were reportedly achieved by converting full strength combat ready divisions to 'cadre strength'. In other words, officer and NCO strength was main-maintained (with the exception of political officers), while enlisted ranks were reduced. (Garthoff, Soviet Strategy in the Nuclear Age, op. cit., p.150). The Army retained twenty-eight divisions in eastern Europe and sixty to seventy divisions in western Russia. (Wolfe, op. cit., pp.166-167); also see L.P. Bloomfield, W.C. Clemens, Jr., F. Griffiths, Khrushchev and the Arms Race. Cambridge, Mass.: The MIT Press, 1966, pp.98-99.

(82) Garthoff, Soviet Strategy in the Nuclear Age, op. cit., pp.161-162; Michel Garder, A History of the Soviet Army. London: Pall Mall Press, 1966, pp.141, 143; Malcolm Mackintosh, Juggernaut. London: Secker and Warburg, 1967, pp.292-293.

which was permeating the whole of the Soviet armed forces foretold difficult days for the ground forces. For the moment, 1955 or 1956 appears to have witnessed a re-allocation of defence expenditures which reduced the portion of the national budget financing conventional weapons and manpower in favour of strategic nuclear systems.(83)

Tactical Air Power

The supporting missions of tactical aviation in this period included - as during World War II - the destruction of enemy troops and equipment engaged in battle, as well as troops and equipment held in reserve, the interdiction of enemy supply lines, assistance to ground force offensives and the pursuit of the enemy through bombing strikes.(84) Finally and perhaps most importantly, tactical aviation was to establish Soviet air superiority by destroying the enemy's air forces in the air and on the ground.(85) Tactical aviation continued to comprise the largest proportion of the nation's bombers and fighters and air transports were assigned, as before, to the support of ground operations. About two-thirds of military aircraft served in a supporting role and more than half were in the charge of Frontal Aviation.(86) The increased status of strategic aviation and occasionally adverse public judgements on the future of manned aircraft were not reflected in tactical force levels or the persistent effort to improve the quality or tactical air power.(87)

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(83) Garthoff, Soviet Strategy in the Nuclear Age, op. cit., pp.156-166; Bloomfield, op. cit., p.42; Also on the Soviet Army, see B.H. Liddell-Hart, ed., The Soviet Army. London: Weidenfeld and Nicolson, 1956; Edgar O'Ballance, The Red Army. London: Faber and Faber, 1964.

(84) Lee, op. cit., p.160.

(85) Ibid., p.158.

(86) Garthoff, Soviet Strategy and the Nuclear Age, op. cit., p.163.

(87) Ibid.; Lee, op. cit., p.159.

The improvement of tactical aviation in this period involved the introduction of several new types of combat aircraft.(88) In search of greater mobility, Transport Command was also enlarged with the deployment of greater numbers of both fixed wing transports and helicopters.(89)

Sea Power

In the early post-Stalin years the Navy argued for the continuation of Stalin's surface ship construction programme - suspended soon after the late Premier's death - opposing the view that nuclear weapons and land-based missiles had dramatically reduced the strategic significance of sea power.(90) Despite doubts as to the future of the Navy, it was officially recognised that 'combat in

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(88) The MiG-17 fighter appeared in 1954 as a replacement for the MiG-15. In 1954-1955 the Yak-25 joined tactical aviation in squadron service as the standard night and all-weather fighter. In 1955 the MiG-19 - the first Soviet jet fighter capable of supersonic speeds in level flight - began to replace the MiG-17 in tactical units. By 1957-1958 the MiG-19 was superseded by the more powerful MiG-21. From 1956-1957 a supersonic advance on the IL-28 bomber, the IL-40 Blowlamp entered service. At about the same time a bomber version of the Yak-25 became operational with radar bombing equipment. (William Green, 'The Development of Jet Fighter and Fighter Bombers', in Asher Lee, The Soviet Air and Rocket Forces. London: Weidenfeld and Nicolson, 1959, pp.140-145; Lee, op. cit., pp.159; 168-169).

(89) Lee, op. cit., p.163.

(90) T.W. Wolfe, 'Soviet Naval Interaction with the United States and its Influence on Soviet Naval Developments', in Michel MccGwire, ed., Soviet Naval Developments: Capabilities and Context. Halifax, N.S.; Dalhousie University, Centre for Foreign Policy Studies, 1973, pp.219-220.

naval theatres assumes more significance than in the recent war' and that nuclear technology 'significantly increases the power of the Navy and widens the framework of the employment of the Navy'.(91) Khrushchev's policy in this period acknowledged at least two highly significant naval missions: the destruction of enemy surface ships - especially aircraft carriers - and the delivery of nuclear blows against the enemy's armed forces, military bases, port facilities and defence industries.(92) However, the admittedly important naval role was not to be carried out by a 'balanced' fleet of the kind which many naval officers desired. Instead, large conventional surface forces were pronounced critically vulnerable and consequently obsolete, requiring an intensified stress upon modern weapons technology - emphasising nuclear power, sea launched missiles and the submarine.(93)

The judgement that surface ships had become fatally vulnerable to missile and submarine attack brought the cancellation of several construction programmes, affecting cruiser, destroyers, escorts and large submarine chasers.(94) These outmoded vessels were to be succeeded by destroyer-size ships designed to strike at enemy

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(91) Garthoff, Soviet Strategy in the Nuclear Age, op. cit., pp.197-199.

(92) Ibid.

(93) Ibid., pp.200-201; George Hudson, 'Soviet Naval Doctrine 1953-1972' in MccGwire, ed., op. cit., pp.247-250.

(94) Michel MccGwire, 'The Turning Points in Soviet Naval Policy' in MccGwire, op. cit., pp.164, 167-168. In 1967 as part of the policy of generally reducing armed forces manpower and expenditures, the Navy was cut from 600,000 to something like 500,000 seamen and 375 warships were mothballed. (Donald W. Mitchell, A History of Russian and Soviet Sea Power. New York: Macmillan, 1974, p.477.

surface units with long-range cruise missiles under the cover of shore-based airpower.(95) Conventionally armed surface ships were modified and new destroyer and cruiser types designed and produced as missile launchers.(96) The adverse assessment of surface ships finally quashed any idea of constructing aircraft carriers, encouraging instead an improvement in naval aviation in the area of fleet operations as part of a strategy which tied the surface fleet to shore-based air power.(97) The numbers of aircraft and naval airmen were reduced but aircraft new to naval aviation were introduced, enlarging its anti-submarine and reconnaissance capabilities.(98)

The major naval construction effort in this period was applied to the subsurface fleet. Medium-class submarines programmes were cancelled and additional resources devoted to the construction of a modern missile armed force of ocean-going nuclear and diesel powered submarines.(99) The submarine was assigned two significant missions: strategic interdiction and the delivery of nuclear

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(95) MccGwire, op. cit., p.164.

(96) MccGwire, 'The Structure of the Soviet Navy', in MccGwire, ed., op. cit., pp.136-137; MccGwire, 'The Turning Points in Soviet Naval Policy', op. cit., p.164; Wolfe, 'Soviet Naval Interaction with the United States and its Influence on Soviet Naval Deployments', op. cit., pp.222-224.

(97) MccGwire, The Turning Points in Soviet Naval Policy, Ibid., p.164.

(98) Asher Lee, The Soviet Air Force. London: Gerald Duckworth, 1961, pp.152-153; Wolfe, Soviet Power and Europe, 1945-1970, op. cit., p.191 and Note 141; Mitchell, op. cit., pp.477-478.

(99) Wolfe, Ibid., pp.189-191.

strikes.[100] The interdiction mission was vital in view of NATO's dependence upon trans-Atlantic re-supply support and the deployment of large American aircraft carriers. The anti-carrier mission was established as the first naval priority between 1957 and 1958.[101]

Enemy communications, as well as warships, were to be assaulted by submarines firing torpedoes and missiles tipped with nuclear warheads.[102] Conventionally powered and conventionally armed units were also added to the subsurface fleet.[103]

Limited Warfare

While it was generally the Soviet view that the successful limitation of any conflict involving the USA and the USSR was most unlikely, if not entirely impossible, the degree of official certitude appeared to vary somewhat with the kind of conflict under discussion. Some Soviet pronouncements in the mid-1950s seemed to recognise the possibility of a major non-nuclear war between east and west. Responding to questions on the use of atomic and nuclear weapons in future wars, Marshal G.K. Zhukov said, in 1957: 'Neither I nor anyone else can answer completely all those questions now because all wars, major and small, are waged and end under specific political, geographical and economic conditions.'[104] Other statements by

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(100) On the development of missile firing submarines and missile systems, see pages 251-254.

(101) MccGwire, 'The Turning Points in Soviet Naval Policy', op. cit., p.175.

(102) Garthoff, Soviet Strategy in the Nuclear Age, op. cit.,pp.202-204.

(103) Michel MccGwire, 'Comparative Warship Building Programmes', in MccGwire, ed., Ibid., p.135.

(104) Garthoff, Ibid., pp.102-103.

senior Soviet commanders in this period implied that future conflicts would involve nuclear exahanges if the west initiated the nuclear phase.(105) Although the Russians seemed to imply at least some possibility of a major non-nuclear conflict between east and west, Soviet statements later in the decade and the increasing nuclearisation of the Soviet armed forces generally supported the view that a major and prolonged conventional clash - particularly in Europe - would prove unworkable. The maintenance of large conventional forces was increasingly described as necessary - not for major non-nuclear wars - but in terms of the heavy losses which could be expected in a nuclear war.(106)

The declaratory Soviet position on local wars and limited nuclear warfare was rather more clearly stated than the official stand on major conventional conflicts. While it is possible to discover statements made in the mid-1950s which appear to grant the possibility of local wars between the great powers (wars confined to a single theatre of operations), General G. Pokrovsky expressed the predominant Soviet view when in 1957 he said: 'The era of local war is over'.(107)

The Russian attitudes on limited nuclear war remained consistent through the Khrushchev period. Any use of nuclear systems would inevitably lead to massive destruction, eliminating any peacetime distinction between tactical and strategic weapons. American reference to tactical nuclear warfare or the 'precision' use of nuclear weapons against military targets was dismissed as an attempt to accustom public opinion to their use, a deceptive pretence that nuclear

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(105) Garthoff, Soviet Strategy in the Nuclear Age, op. cit., pp.103-104.

(106) Ibid., p.164; Wolfe, Soviet Power and Europe, 1945-1970, op. cit., pp.208-211.

(107) Garthoff, Ibid., pp.112-115.

war could be conducted without tremendous damage to civilian centres. The Russians argued that the first firing of tactical nuclear weapons would 'lead to the mass use of atomic and hydrogen bombs'. The proximity of so-called 'military targets' to population centres rendered meaningless any idea of 'precision' attacks in nuclear warfare. The use of tactical atomic weapons would 'inevitably result in immense loss of life among civilians'.(108)

Warsaw Pact

On May 14, 1955, following the admission of the Federal Republic of Germany to NATO, the Soviet Union and its European allies (excluding Yugoslavia and, for the time being, East Germany), signed a Treaty establishing the Warsaw Pact. The Pact - an organisation only very roughly comparable to NATO - included a joint command and a political consultative committee. As well as apparently bolstering socialist defences against a western attack, the Pact provided an additional basis for continued Soviet military deployments in eastern Europe.(109) In the first five years of its existence, the

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(108) Garthoff, Soviet Strategy in the Nuclear Age, op. cit., pp.107-112.

(109) Garthoff, Soviet Military Policy. New York: F.A. Praeger, 1966, pp.149-150; The Russians had already signed a number of bilateral defence agreements with eastern European countries before the Warsaw Pact was created. Following serious disturbances in Poland and Hungary during the 1950s, new 'status of forces' agreements providing for the deployment of Soviet forces in the territory of Poland, Hungary and Rumania were signed in 1956 and 1957. Soviet forces were withdrawn from Austria in 1955 and from Rumania in 1958. (Wolfe, Soviet Power and Europe, 1945-1970, p.149).

Warsaw Pact served largely as a political response to West Germany's NATO membership, with little done to establish the alliance as a powerful and integrated military organisation. Soviet armed forces remained the effective barrier to any western invasion. Nevertheless, measures were taken to provide the Pact with military substance. An effort to standardise weapons and field doctrine along Soviet lines was pursued. Each Pact member was assigned broadly drawn strategic missions and some local arms production was encouraged.(110) In addition to the rather low-key programme for the military development of the alliance, the modernisation of the national armed forces of its members was continued. While east European military manpower was reduced by almost one-third between 1955 and 1960,(111) the modernisation process brought Soviet military assistance to its European allies in the form of equipment and weapons deliveries.(112)

Strategic Nuclear Forces

Strategic Air Power

While the statements of some Soviet commanders in the post-war Stalin period reflected a positive re-evaluation of long-range aviation, Stalinist air doctrine as a whole did not reflect any major improvement in its status.(113) By contrast the mid-1950s were marked by public acknowledgement of the heightened significance of air power in the muclear era.(114) The great importance of air-nuclear forces was now widely recognised, although the Russians continued to note that air

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(110) Wolfe, Op. cit., pp.148-149.

(111) Garthoff, Soviet Military Policy, p.151.

(112) Ibid., pp.134-152; Also see Roman Kolkowicz, 'Warsaw Pact: Entangling Alliance', Survey, Spring 1969, pp.86-101.

(113) Garthoff, Soviet Strategy in the Nuclear Age, op. cit., pp.175-179.

(114) Ibid., pp.179-192; Dinerstein, op. cit., pp.230-236.

power was not the 'war-winner' and victory was still to be won 'only by the combined efforts of all the armed forces and on the basis of their co-ordinated employment in war'.(115) Further, after the dramatic demonstration of the USSR's ICBM capabilities in 1957, Khrushchev occasionally delivered highly pessimistic assessments of manned aircraft.(116)

Finally, while generally acknowledging an expanded role for long-range aviation, the Russians clearly did not accept American views on the decisiveness of strategic aviation or the urban-industrial emphasis of US air strategy. American doctrine was still accused of exaggerating the effectiveness of bombers;(117) and any suggestion that the main objective of air power was the destruction of an enemy's urban-industrial areas or his will to resist, was firmly rejected. Attacks on economic and population targets were only to complement the major assault on the rear of the enemy's armed forces.(118) In other words, from the American perspective, an assault on Soviet air-nuclear forces was seen as necessary, if the primary objective of destroying the enemy's economic and population centres were to succeed, whereas the Russians regarded the destruction of America's nuclear strategic capability, as well as other elements of American military power, as in itself the highest strategic priority.(119)

In accord with the improved status of strategic aviation, the development of new bomber types in the early and mid-1950s proceeded

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(115) Garthoff, op. cit., p.180.

(116) See pages 308-309.

(117) Garthoff, op. cit., pp.182-183.

(118) Ibid., pp.180-182.

(119) Ibid., pp.186-187; Bloomfield, op. cit., p.42.

apace, as a larger portion of the defence budget was allotted to bomber R & D. With the settlement of the leadership question in 1955, the Soviet Union was faced with a number of development and deployment options in long-range aviation. The record of Khrushchev's policy was to reflect an apparent decision to develop a mix of long-range and medium-range bombers, emphasising medium-range aircraft.(120)

In 1954 the TU-16 twin-jet medium bomber or Badger entered squadron service and production of the four-jet M-4 Bison began. In the same period the turbo-prop TU-95 Bear also appeared.(121) By the closing years of the 1950s, reflecting an apparent emphasis on medium-range aircraft and the European theatre, the USSR had deployed only some 150-200 of the longer ranged Bear and Bison bombers, as compared to 1,000 of the medium jet Badger aircraft.(122) As well as improving bomber quality by the middle of the decade, the Russians also developed aerial refuelling techniques and were producing a fleet of in-flight refuelling tankers.(123) The strike capability of strategic aviation against North America was further extended by the construction of some thirty to forty new jet bomber bases in the Soviet Union's Arctic regions, beginning in about 1955.(124)

Land-Based Ballistic Missiles

The first Soviet ICBM tests elicited a number of not entirely consistent public statements on the relative significance of the strategic bomber and the long-range ballistic missile. Chairman Khrushchev in 1957 expressed the view that the development of missiles

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(120) Wolfe, Soviet Power and Europe, 1945-1960, op. cit., pp.178-179.

(121) Lee, op. cit., pp.133-134.

(122) Ibid., p.179.

(123) Sir Philip Joubert, 'Long-Range Air Attack', in Lee, ed., op. cit., p.109.

(124) Lee, op. cit., p.137.

made bombers 'obsolete'. Mr. Khrushchev declared: 'Fighter and bomber airplanes can now be put into museums'.(125) However, at the same time other statements were published by Soviet commanders which continued to acknowledge an important role for long-range aviation. While missiles were generally regarded as the most suitable weapon for stationary targets, bombers were still said to be useful against mobile targets or targets whose location was not precisely known, suggesting that the enemy's armed forces were the most likely target assignment for strategic aviation.(126)

A programme for missile research and development was vigorously pursued after Stalin's death. By the middle of the decade most of the German scientists involved in Soviet rocket research were withdrawn from the programme, which was now entirely in Russian hands.(127) At this time the USSR had already succeeded in the development and production of the T-1 (or M-101) missile type, a derivative of the German V-2. A single stage liquid-fuelled rocket, initially with a range of 200-400 miles which was extended to some 600-775 miles in the later half of the 1950s. The later version of the T-1 was mobile and carried a nuclear warhead of perhaps 800 lbs.(128) The USSR was reported to have begun test firing an IRBM, the T-2 in 1954-1955, as well as beginning small scale T-2 production in 1956, the missile which was to become the mainstay of the Soviet missile forces.(129) This weapon had a range variously estimated in the west at some 1,200 to 2,000 miles. Its liquid-fuelled engines powered two stages and an atomic warhead of about 700 lbs. at a maximum speed of 5,000 m.p.h.(130)

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(125) Garthoff, Soviet Strategy in the Nuclear Age, op. cit., pp.222-223.

(126) Ibid., pp.223-227.

(127) Albert Parry, Russia's Rockets and Missiles. London: Macmillan, 1960, pp.125-128.

(128) Ibid., pp.132-133.

(129) Lee, op. cit., pp.139, 140, 235-236.

(130) Asher Lee and Richard E. Stockwell, 'Soviet Missiles' in Lee, ed., op. cit., pp.146-159; Parry, op. cit., p.133; Lee, op. cit., pp.139, 140, 235-236.

Work on missiles of intercontinental range was also vigorously conducted during the mid-1950s. The three stages T-3 (M-104) missile - based upon the T-1 and T-2 weapons - was first successfully test-fired in August of 1957. It had a range of some 5,000 miles, a top speed of 15,000 miles per hour and was capable of delivering a thermonuclear warhead estimated at somewhere between 700 and 2,200 lbs. It reportedly entered some order of production in 1958.(131) A more advanced ICBM type, the T-3A, with a 6,000 mile range and 16,000 m.p.h. speed, was also under development.(132) In October of 1957 a variety of the T-3 and T-3a engines were used to launch Sputnik I greatly alarming much of the western world.(133) During the mid-1950s the Russians proceeded with deployment of a considerable number of its medium and intermediate range missiles in the European theatre, eventually reaching a total of some 700-750 by the time of Khrushchev's retirement.(134) With the clear demonstration of an ICBM capability in 1957, it was widely assumed in the United States that Mr. Khrushchev would approve the large-scale production and deployment of ICBMs in the latter half of the decade. While a major deployment effort was not to occur, the first successful ICBM test in 1957, the launch of Sputnik I and II in the same year, the progress of MRBM development, as well as evidence of a major re-allocation of scientific and technical manpower to missile development in 1955 have together been taken to suggest that missile development was placed 'on a crash basis' in 1955.(135)

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(131) Lee and Stockwell, op. cit., p.135; Parry, op. cit., p.141; Lee, op. cit., pp.139, 236.

(132) Lee and Stockwell, op. cit., p.155; Parry, op. cit., p.141; Lee, op. cit., pp.139, 141, 236.

(133) Lee and Stockwell, op. cit., p.158.

(134) Wolfe, Soviet Power and Europe, 1945-1970, op. cit., pp.183-184.

(135) Bloomfield, op. cit., pp.41-43.

Submarines and Submarine-Launched Missiles

Khrushchev's naval policy centred on the submarine. Public expressions of confidence in the submarine-missile systems were accompanied by an effort to construct an enlarged diesel and nuclear powered submarine fleet stressing ocean-going types while retiring many coastal subs. Both conventional and nuclear submarines were to be armed with either cruise or ballistic missiles.(136) Soviet doctrine in the mid-1950s spoke of the missile-submarine combination as performing critical missions in attacking enemy surface ships and in launching nuclear strikes.(137) Although the development of the submarines as a nuclear delivery system was regarded as of great significance in this period, in 1957-1958 Khrushchev was to approve the establishment of the anti-surface ship mission - or more specifically the anti-carrier role - as the short-term naval priority. It was apparently also at this time that Khrushchev was to approve the construction of an all-nuclear submarine force and the development of new long-range submarine-launched ballistic missiles (SLBMs) systems, as well as new short-range cruise weapons.(138)

Work on several types of diesel powered missile firing submarines was pursued in the first years after Stalin's death. The Z-class submarines were originally intended as cruise missile launchers. However, in 1949 its design plans were modified to accommodate

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(136) Wolfe, Soviet Power and Europe, 1945-1970, op. cit., pp.189-190.

(137) Garthoff, Soviet Strategy in the Nuclear Age, op. cit., pp.204-205; Parry, op. cit., pp.153-154.

(138) MccGwire, 'The Turning Points in Soviet Naval Policy', op. cit., p.175; Wolfe, 'Soviet Naval Interaction with the United States and its Influence on Soviet Naval Developments', op. cit., p.224.

ballistic weapons instead, changing its designation to ZV-class.

In September 1955, a ZV-class type achieved the first Soviet SLBM* launch.(139) As the ZV-class was underway the adoption of the W-class submarine for the launch of cruise missiles was also undertaken.(140) In 1954 the W-class Longbin medium-type diesel submarine, designed to carry four fin-mounted cruise missiles, was approved for development and construction. However, the Longbin was cancelled in 1957-1958, falling to Khrushchev's preference for ocean-going types.(141) The development of the G-class submarine, planned in the 1940s as a ballistic missile launcher, was also continued in the mid-1950s.(142) In 1954 some seventy-two J-class submarines, armed with cruise missiles, were planned. Work on the J-class was also continued in this period, although only sixteen of this type were to join the fleet in the 1960s.(143) The ZV-class was the only submarine type under development during the early and mid-1950s which was ready for service in the same period, the first of its kind appearing in about 1955.(144)

The first nuclear submarine hull - an N-class vessel - was reportedly laid down in 1956. In 1947 the N-class was designed to fire torpedo-launched nuclear warheads at strategic range; however the N-class was switched to an anti-carrier role in 1957-1958.(145) Construction of H-class submarines may also have begun as early as

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(139) MccGwire, 'The Structure of the Soviet Navy', op. cit., p.134; Wolfe, 'Soviet Naval Interaction with the United States and its Influence on Soviet Naval Developments', op. cit., p.225.
(140) Parry, op. cit., p.159; Wolfe, op. cit., p.225.
(141) MccGwire, op. cit., p.134; MccGwire, 'The Turning Points in Soviet Naval Policy', op. cit., p.160.
(142) MccGwire, 'The Structure of the Soviet Navy', op. cit., pp.133-134.
(143) Ibid., p.134.
(144) Ibid.

* Submarine Launched Ballistic Missile.

1956, eventually becoming the first Soviet nuclear submarine capable of the surface launch of ballistic missiles.(146) The mid-1950s also saw the laying down of the E-class nuclear submarine and the beginning of development programmes for two generations of E-class ships. The E-class was designed as a cruise missile launcher in an anti-carrier role.(147) In 1957-1958, it was decided to expand building capacity for nuclear submarines by two to threefold.(148) At the same time the nuclear C-class was approved for the surface launch of cruise missiles against carriers(149) and the design decisions were taken for the nuclear powered Y-class submarines, intended for the subsurface launch of long-range ballistic missiles.(150) Finally, in 1957-1958, the V-class design was approved. Torpedo armed, it was to serve in an anti-submarine role.(151) None of the nuclear submarines types under development during the early and mid-1950s were ready for service until the later years of the decade, the H and N classes first joining the Navy in 1958.(152)

In addition to the development of nuclear propulsion, the second major submarine programme of the early post-Stalin period concerned the production of cruise and ballistic missiles for subsurface launch. Soviet interest in submarine launched missiles was reflected in early post-war investigations into German plans for firing V-2 rockets from submersible canisters towed by a submarine.(153) It was reportedly

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(146) MccGwire, 'The Structure of the Soviet Navy', op. cit., p.133; Wolfe, Soviet Naval Interaction with the United States and its Influence on Soviet Naval Developments', op. cit., p.226.
(147) MccGwire, 'The Structure of the Soviet Navy', op. cit., p.134.
(148) MccGwire, 'The Turning Points in Soviet Naval Policy', op. cit., p.165.
(149) MccGwire, 'The Structure of the Soviet Navy', op. cit., p.134.
(150) Ibid., p.133.
(151) Ibid., p.135.
(152) Ibid., pp.133, 135.
(153) Parry, op. cit., pp.153-154.

decided in approximately 1949 to install ballistic missiles aboard submarines. A 300 mile MRBM* was developed by 1949-1950 for that purpose.(154) Ballistic missile development decision affecting sea launched weapons suitable for land-based targets reportedly pre-dated those concerning anti-shipping systems.(155) The earliest of the Soviet submarine ballistic systems, the SS-N-4, was first test-fired from a ZV-class submarine in 1955. Surface launched and capable of a perhaps 300-350 nautical mile range, it was later fitted aboard G-class and H-class submarines. Research was also in progress on the SS-N-5, a ballistic missile capable of underwater launch and a 650 nautical mile range. The SS-N-5 was also destined for G-class and H-class service. In the cruise field, work on the SS-N-3, offspring of the land-based Shaddock missile, was underway.(156)

Strategic Defence

As well as increasing the declaratory position and strength of strategic aviation, the status and capabilities of air defence were also improved in the mid-1950s. In 1956 Marshal Zhukov stated: 'The relative weight of air defence forces in the composition of the armed forces has grown significantly ... the task of defence of the rear of the country has never loomed so large as under contemporary conditions.(157) Air defences were strengthened in the first two

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(154) MccGwire, 'The Turning Points in Soviet Naval Policy', op. cit., p.174.

(155) Wolfe, 'Soviet Naval Interaction with the United States and its Influence on Soviet Naval Developments', op. cit., pp.224-225.

(156) MccGwire, 'The Structure of the Soviet Navy', op. cit., pp.140, 141; Wolfe, 'Soviet Naval Interaction with the United States and its Influence on Soviet Naval Developments,' op. cit., p.225.

(157) Garthoff, Soviet Strategy in the Nuclear Age, op. cit., p.190.

* Medium Range Ballistic Missile.

years after Stalin's death and its continuing improvement was established as a high order strategic priority after the first post-Stalin leadership crisis. The increased significance attached to air defence was clearly reflected in a major re-organisation of the nation's air defence forces (PVO). In 1955 the air defence command was established as an independent armed service. Its new Commander-in-Chief, S.S. Biriuzov, was granted the rank of Marshal and Deputy Minister of Defence. As C-in-C, Marshal Biriuzov was given control of air defence policy and administration.(158)

Organisational changes were accompanied by vigorous efforts to improve the quality of PVO aircraft and developing new fighter types.(159) The PVO in the mid-1970s also began to benefit from the missile research of the Stalin period, as the first surface-to-surface and air-to-air missile joined the air defence forces.(160) In addition to growing numbers of missiles, the Russians maintained several thousand radar-guided anti-aircraft guns during the 1950s.(161) Finally, an effort was made to improve the nation's radar-warning system, still inadequate for air defence purposes.(162)

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(158) Lee, op. cit., pp.120-122.

(159) These aircraft included the twin-engined Yak-25. The first Soviet jet fighter, it entered service the PVO in 1955 and was succeeded by a supersonic version in later 1950s. The MiG-17, a subsonic turbo-jet fighter which began to replace the MiG-15 in 1953 or 1954, entered large scale production in the mid-1950s. The MiG-19 - The USSR's first supersonic day fighter - joined the PVO in 1955. By 1957-58 the MiG-19 was beginning to be replaced by the MiG-21, powered by a turbo-jet engine able to reach a top speed of something like twice the speed of sound. (Lee, op. cit., pp.119, 120, 122, 139, 168, 169; Green, op. cit., pp.140-143).

(160) Asher Lee, 'Strategic Air Defence' in Lee, ed., op. cit., pp.124, 125, 128; Lee, op. cit., pp.120-123, 233; Wolfe, Soviet Power and Europe, 1945-1970, op. cit., p.185.

(161) Lee, op. cit., p.125.

(162) Lee, 'Strategic Air Defence', op. cit., pp.126-127.

While Soviet statements on ballistic missile defence during the mid-1950s did not appear to expect the imminent deployment of an effective anti-ballistic missile system capability, the Russians professed to believe that a BMD* system would eventually be constructed.(163) Major-General of the Engineering Technical Services, G.I. Pokrovsky, recognising the formidable capabilities of the ICBM, nevertheless stated: 'In principle, a defensive anti-missile missile is possible'.(164) Despite the daunting technical difficulties, BMD research was pursued, beginning, according to Khrushchev, at the same time as a major ICBM programme was undertaken.(165)

Assessment of Action-Reaction's Influence in the Early Post-Stalin Period

Evidence of Reaction

Re-assessment of Nuclear Weapons

On scanning the range of developments in Soviet strategic doctrine and deployments during the early post-Stalin period, a number of instances of apparent Soviet reaction to American actions can be identified. After several years in which 'Stalinist Military Science' had enforced a highly unadmiring view of atomic and nuclear weapons, Stalin's death was followed by a re-examination of the new technology which greatly enhanced its doctrinal status and operational role. While Soviet experience with the development and testing of nuclear weapons alone would probably have convinced the Russians of the need

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(163) Garthoff, Soviet Strategy in the Nuclear Age, op. cit. pp.228-231.
(164) Lee, op. cit., p.125.
(165) Wolfe, Soviet Power and Europe, 1945-1970, op. cit., p.186.

* Ballistic Missile Defence.

for a revision of Stalinist doctrine, it is more than likely that the Soviet re-evaluation of nuclear power during the 1950s was strongly encouraged by developments in American weapons and doctrine. From the beginning of the post-war period the United States had steadily strengthened its strategic arsenal, increasing the quantity and quality of its weaponry and improving the capabilities of its delivery systems. The Eisenhower Administration had also publicly declared its commitment to massive air-nuclear power as the basis of American defence policy. In such circumstances the USSR was sharply motivated to reconsider its own estimate of nuclear technology.

Re-assessment of Surprise

The orthodox Stalinist view of surprise attack very probably impressed many Soviet commanders as extreme, even in the late 1940s. The extensive Soviet experience in nuclear weapons development during the following decade and the presumably deepening insight into their capabilities would have all but compelled a modification of the doctrine on surprise. The writings of several Soviet commentators in the early and mid-1950s clearly acknowledged that modern weapons technology required a re-assessment of the concept. However, the rapid growth of American air-nuclear strength must have served as a powerful stimulus to a re-evaluation of surprise.

In the course of the Malenkov-Khrushchev debate, the Party Chairman argued that America's development of nuclear weapons had increased the probability of a sudden American attack, a danger allegedly underscored by the 'massive retaliation' doctrine. Similarly, the first public discussion of pre-emption may also have

been encouraged by US air-nuclear force levels. Certainly the already established margin of US nuclear superiority suggested that the United States might be attached to a strategy of surprise and proposed pre-emption as a means by which the Soviet Union's inferior nuclear forces could avoid destruction at the very outset of a future war.

Role of Strategic Aviation

The early and middle 1950s were also marked by an improvement in the doctrinal status of strategic aviation, as well as a vigorous effort to develop long-range aircraft. The improvement in both the declaratory and operational fortunes of strategic aviation was very probably encouraged by American actions. The United States had steadily expanded the capabilities of its strategic air power from the end of the Second World War, an area in which the USA already enjoyed an important advantage. The established American emphasis on bombers was further accentuated by the 'New Look' massive retaliation policy which largely entrusted US security to the Strategic Air Command.

However, while US doctrine and deployments may have encouraged the Russians to look upon their Long-Range Air Force with new respect, they clearly were not induced to adopt American air doctrine. They continued to reject the notion that strategic aviation would prove decisive in a future war and maintained a targeting doctrine which established the destruction of the enemy's armed forces as the first combat objective.

The Russians also failed to emulate US force structure in its emphasis on intercontinental bombers. Instead, Soviet deployments heavily favoured medium-range aircraft. This medium-range bias

reflected the traditional Soviet concentration on the European theatre, an emphasis reinforced in this period by the growing American air-nuclear involvement in Europe. The decision to deploy a large number of medium bombers may also have been inspired by the judgement that the ballistic missile promised a more effective means of delivering intercontinental nuclear strikes. The strain on resources which a heavy investment in both strategic bomber and missiles would have imposed, may also have argued against, large scale long-range bomber production, along with the technical shortcomings of the Bear and Bison aircraft. Nevertheless, a relatively small force of strategic aircraft was deployed, perhaps as a hedge against the possible failure of the ICBM programme.(166)

Land-Based Missiles

The intensive Soviet development of both medium and long-range missiles in the mid-1950s was a continuation of a pioneering Stalinist R & D programme, rooted in the independent Soviet judgement that the ballistic missile represented a dramatic advance in delivery systems. However, the rapid acceleration of missile development in the mid-1950s was very probably stimulated by the Eisenhower commitment to a heavily nuclearised doctrine, as well as the continued expansion of US strategic power. It was clearly essential for the Sovier Union to develop a long-range nuclear capability and the ballistic missile, a weapon in which the USSR enjoyed a clear advantage over the USA, was evidently seen as offering a major contribution to Soviet nuclear requirements.

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(166) Wolfe, op. cit., pp.178-181.

Despite the urgent need for a strategic nuclear reach equalling that of the United States, the structure of Soviet missile forces, only just beginning to take shape in the early and mid-1950s, would eventually reveal a heavy bias in favour of medium-range systems assigned to European targets. The concentration on weapons of less than trans-Atlantic range was probably the consequence of the technical difficulties which were to play an important part in confining the Russians to a minimal ICBM force until the early 1960s. However, technology aside, the American decision to add tactical nuclear weapons to its NATO contribution provided a strong case for a large I/MRBM deployment.(167)

Strategic Defence

A clear and direct Russian reaction, or perhaps more accurately continuing reaction, to American actions in this period appeared in Soviet air defence policy. In the face of America's expanding strategic capabilities, including a number of air cases located uncomfortably near to Soviet territory, as well as the deployment of US aircraft carriers and a 'New Look' doctrine strongly emphasising air power, the USSR further strengthened its air defences during the mid-1950s and boosted the doctrinal and organisational status of the air defence forces. Each of the measures taken can be regarded as responsive to US policy and deployments. Similarly, the intensified interest in civil defence represented a heightened post-Stalin awareness of the American nuclear 'threat', as well as a recognition of the failings of

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(167) T.W. Wolfe, Soviet Power and Europe, 1945-1970, op. cit., pp.141-143; Herbert York, Race to Oblivion. New York: Simon and Schuster, 1970, p.95; Colin S. Gray, 'Predicting Arms Race Behaviour', Future, October 1974, p.384.

even the best of defensive systems and a firm determination to limit the damage inflicted by a mssive air strike.

Soviet research into the problem of ballistic missile defence during this period marked an aspect of the strategic defence effort which may have had deeper domestic roots than either air or civil defence. As it appears that BMD development and ICBM research began simultaneously,(168) or, in other words, considerably before any large-scale American missile programme, the BMD problem was evidently posed to the Russians by their own experience with long-range missiles. Subsequent research during the early 1950s was unlikely to have been pursued in direct response to an American ballistic missile programme which was inferior to that of the Russians in the quality of its technical achievements, as well as in the urgency and domestic status of its work. However, President Eisenhower's decision to accelerate the American ICBM programme in 1955 may have had some effect on the Soviet BMD effort.(169)

Sea Power

The increasing significance of the Soviet Navy during the mid-1950s can fairly be described as responsive to western actions. The deployment of large American aircraft carriers was certainly among the most important stimulants behind the expansion of the Soviet Navy's strategic role. The destruction of these great ships before the launch of their nuclear armed aircraft obviously constituted a major strategic

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(168) Wolfe, Soviet Power and Europe, 1945-1970, op. cit., p.186.

(169) Michael H. Armacost, The Politics of Weapons Innovation. New York: Columbia University Press, 1969, p.53.

objective. The seriousness with which the Russians regarded the carrier threat was reflected in a reported re-ordering of naval missions in 1957-1958, establishing the elimination of US aircraft carriers as the first priority of Soviet sea power.

The plan for the wartime reinforcement and supply of NATO forces by the US Navy was also among those western actions which enhanced the importance of the Soviet fleet. Clearly the interdiction of NATO supply and communications was essential for any successful war effort in Europe. The development of nuclear powered submarines in the Soviet Union began no later than 1953. However, the launch of the first American nuclear submarine in 1954 probably acted to intensify Soviet efforts in this field.(170) The adaption of the submarine as a missile launcher seemingly required no encouragement from abroad. Soviet research on submarine launched missiles began soon after World War II.(171)

While the increased status of the Soviet Navy was clearly stimulated by western actions, the Russians clearly did not respond to the growing seaborne 'threat' by constructing an imitation of western 'balanced' fleets. Instead, Khrushchev presided over a shift in naval policy reflecting a strong preference for the submarine over large conventionally armed surface ships. Stalin's programme for surface ship construction was replaced by plans for relatively light missile firing surface ships and a large force of ocean-going submarines. This major change in Naval policy, although fundamentally inspired by

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(170) Wolfe, 'Soviet Naval Interaction with the United States and its Influence on Soviet Naval Developments', op. cit., pp.225-226.

(171) Ibid., p.225.

the need to resist western Navies, was motivated by the independent Soviet judgement that surface ships had become critically vulnerable to missile and submarine attacks. The move may also have been prompted by a desire to curtail the costly Stalinist naval programme in a time when the sophisticated weapons requirements of the other armed services were already making heavy demands on the nation's resources. A combination of the vulnerability and economic factors, added perhaps to technical difficulties, probably worked to kill off the idea of deploying a Soviet force of aircraft carriers.(172)

Ground Forces

As the process of de-Stalinising Soviet doctrine proceeded from 1953 to 1957, the year which Khrushchev finally secured his personal political position, the strategic mission of conventional forces suffered a decline implicit in the public acknowledgement that strategic nuclear weapons were of major, perhaps in some circumstances even decisive significance. This recognition marked the beginning of a new trend in Soviet doctrine which was not to be fully developed until some time after Khrushchev had secured both the Party and state leadership. While conventional forces in the mid-1950s may not have enjoyed quite the position of pre-eminence which Stalin had assigned to them, a large and effective Army was still said to be absolutely essential to the successful outcome of a future war. The sincerity of their public assertion was reflected in a vigorous effort to strengthen and further modernise the ground forces during the 1950s.

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(172) Wolfe, 'Soviet Naval Interaction with the United States and its Influence on Soviet Naval Development', op. cit., pp.222-223.

It is perhaps conceivable that the USSR's development of nuclear weapons in itself would have proven sufficient to persuade many Russians that the traditional assessment of the significance of ground armies - particularly in its full-blown Stalinist form - required modification. However, it is all but impossible to imagine that America's strategic posture in the 1950s, with its very pronounced nuclear slant, did not strongly argue for a corresponding readjustment in Soviet defence planning. Whatever its origins, by the middle of the decade there was already evidence of a re-allocation of defence expenditures and weapons research which rapidly accelerated the development of strategic nuclear systems at the expense of conventional forces.(173) The first of Khrushchev's reductions in military manpower levels, while motivated in part by the Party Chairman's economic objectives, was also an indication of a changing strategic emphasis.

However, despite the first signs of an emerging shift in policy, the Army retained a very significant place in strategic doctrine. This was in some considerable degree the result of those geo-political factors which, with or without an American adversary, had established the maintenance of large ground forces as a Russian tradition. This tradition was further secured by the east-military confrontation following the Second World War, as well as the importance of Army support for the Khrushchev cause in the post-Stalin leadership contest. The preservation of the Army's position was also served by the demands of a 'hostage Europe' policy which remained valid in a time when the USSR was still very far from achieving anything like nuclear equality with the United States.

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(173) Bloomfield, op. cit., pp.41-43.

The effort to modernise and strengthen the ground forces in this period represented a continuation of a process begun by Stalin immediately after World War II. However, the further improvement of Army effectiveness no doubt received sharp stimulation from western measures intended to strengthen NATO, including alliance membership for a rearming West Germany. The very much intensified Army preparation for combat on a nuclear battlefield was surely spurred by the overall nuclear bias of US strategy and western acceptance of a tactical nuclear solution to the problem of Soviet conventional superiority in Europe.

Warsaw Pact

The creation of the Warsaw Pact in 1955 marked a direct Soviet reaction to western actions. After unsuccessful Soviet attempts to prevent the admission of West Germany to NATO, as well as to block German rearmament, the Federal Republic was admitted to the alliance in 1955. The Soviet response came in the signature of the Warsaw Pact. However, this reaction did not at once assume great operational military substance. For the time being the Pact largely represented a political reaction to NATO developments.

Evidence of Other Factors Influencing Soviet Doctrine and Policy

No Doctrinal Revolution

Before awarding the United States full responsibility for early post-Stalin strategic developments, a few qualifying notes should perhaps be added. First, although Russian policy experienced a major modification in this period, it was not entirely revolutionised, despite the pressures of American actions. The relaxation of Stalin's grip on doctrine permitted reform but did not license total destruction. Elements of Stalin's doctrine survived. The 'permanently operating factors' were greatly devalued but were not entirely eliminated, at least not until the second half of the 1950s. The 'combined arms' principle remained in force as the Russians continued to reject the notion that any single armed service or individual weapon - including those of the nuclear type - would provide for the defeat of an enemy. The ground forces in particular, although facing darker days in the late 1950s, retained a powerful position in declaratory and operational doctrine.

The 'Thaw'

Further, those aspects of Soviet doctrine and policy which were modified in response to American action were also affected by internal Soviet influences and judgements. The doctrinal 'thaw' after 1953 undoubtedly acquired an intense urgency as a result of American actions. However, it was all but inevitable that the virtual ban on strategic thought imposed after the Second World War would end with the Stalin era. The unnaturally sterile environment of the post-war period had been

maintained largely in support of Stalin's personal political position, an objective which ceased to be of vital significance with the death of the wartime leader. Doctrinal reform was also fated by the obvious inadequacies of Stalinist military science. It was surely difficult to convince battle-tested commanders that the sum total of timeless strategic wisdom could be expressed in five rather unoriginal observations labelled 'permanently operating factors'. It was similarly difficult to argue that these principles constituted a unique insight into warfare of which western soldiers had no knowledge, or that this or any other 'short list' would inevitably guarantee Soviet victory. In short, it is highly probable that the Stalinist 'freeze' on doctrine would have begun to 'thaw' after a change in the nation's political leadership, regardless of American actions.

Domestic Politics

While the Malenkov-Khrushchev debate which followed the onset of the post-Stalin 'thaw' was obviously concerned with the growing air-nuclear 'threat' to the Soviet Union, it was also significantly influenced by factors other than Pentagon planning, as each of the contestants attempted to gather support for his domestic political position. The very considerable political utility of Khrushchev's arguments in particular, as well as his rapid change of mind after the defeat of Malenkov, certainly suggest that the Party Chairman's view was determined by more than American force levels. Charges of defeatism and opposition to reductions in the Soviet defence effort, as well as to a nuclearisation of Soviet strategy which implied a diminished role for conventional forces, were all attitudes guaranteed to win vital political support from the armed services.

Some degree of retrospective insight into the role of domestic politics on Khrushchev's public posture in this period is perhaps provided by the shift in the Party Chairman's position soon after Malenkov's resignation when, in a tone recalling that of the former Premier, Khrushchev explained that the reality of socialist military power had modified the Marxist law on the inevitability of war between Imperialism and Communism. Khrushchev's suddenly more optimistic outlook probably reflected his still insecure domestic political position, rather than a response to newly peaceful American intentions or an upsurge in Soviet strength. A more confident assessment of the international situation and the effectiveness of Soviet defence may have proved useful in asserting that the danger of war had receded under Khrushchev's leadership. Certainly any criticism of Soviet foreign policy would have been particularly unwelcome in a time when the Chairman's de-Stalinisation programme appeared to have stimulated violent eruptions in eastern Europe. Subsequent gyrations in Khrushchev's assessment of the likelihood of war and the stabilising affects of nuclear weapons during 1956 and 1957 also seemed to be related to his domestic political fortunes.(174) Clearly, in 1957 when he had again adopted a rather pessimistic view of the world scene and was firmly in support of economic and defence policies acceptable to the professional military, the favour at the armed forces proved invaluable in resisting the efforts of the 'anti-Party' group to remove Khrushchev from office.

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(174) Dinerstein, op. cit., pp.132-163.

Weapons Development

The general re-evaluation of modern weapons technology after the death of Stalin was greatly stimulated by developments in the United States, but was also the product of the early Stalinist commitment to intensive weapons research. The programme for the development of ballistic missiles, land-based and seaborne, represented an independent Soviet research initiative based upon an estimate of the strategic significance of these weapons which the United States was not to share for some time. Similarly, the investigation into the problem of ballistic missile defence was begun as a Soviet initiative, suggested by the USSR's pioneering insight into the strategic potential of offensive missile systems.

Soviet Solutions

Finally, it is important to recall that those features of Soviet doctrine and policy which were modified in reaction to US actions, often failed to produce reactions on anything like the American 'model'. They did not produce emulations of United States policy but instead stimulated native Russian solutions to the problems posed by the developing American 'threat'. While the public recognition of the significance of nuclear weapons and the urgent effort to deploy powerful strategic nuclear forces was in large part fuelled by the massive American nuclear capability, the Russians did not immediately proceed, after the American fashion, to establish air-nuclear system as the centrepiece of Soviet strategy, but instead continued to accord conventional forces a major strategic role.

Similarly, although the post-war development of the Strategic Air Command may have advanced the cause of strategic aviation in the USSR, the Russians continued to spurn American air doctrine and did not attempt to deploy a bomber force rivalling SAC. They continued to deny the Long-Range Air Force a decisive role and rejected the urban-industrial emphasis of US targeting strategy. This period also produced the first highly positive judgements of the ballistic missile as the successor to the strategic bomber, a view foreign to American air doctrine. The mid-1950s also witnessed a Soviet response to the growing threat of US sea power, but neither American naval strategy nor American naval force structure was adopted. For a variety of political, economic, technological and other reasons, the USSR did not embark upon the construction of an ocean-going 'balanced' fleet. Large surface ships were found to be vulnerable and obsolete, including the aircraft carriers in which the Americans were investing heavily. Instead, the Russians chose to meet the carrier 'threat' in particular and the problem of surface ships in general with a force of their own design.

The Emergence of 'Deterrence'

The mid-1950s produced a Soviet statement of the nuclear 'deterrence' concept. Although 'deterrence' was apparently rejected by Khrushchev in his conflict with Malenkov and endured a number of official attacks after Malenkov's resignation, the so-called 'lag' or 'gap' between Soviet and American doctrines over the deterrence principle was at least narrowed by Malenkov's expression of the concept and Khrushchev's halting acceptance of the view that Soviet nuclear strength had reduced the likelihood of war.

As public discussions of 'deterrence' during this period were greatly affected by the domestic political context - perhaps particularly so in the case of Khrushchev - it is difficult to determine conclusively the Soviet assessment of deterrence or to confidently expound on its origins in the USSR. The problem is further complicated in the first two years after Stalin's death by the absence of any fully articulated and firmly accepted Soviet deterrence doctrine. Nevertheless, Malenkov's statements on the significance of nuclear weapons and his apparent support for something like 'mutual deterrence' were reminiscent - although perhaps only vaguely so - of views earlier expressed in the United States. It is certainly possible that the Premier's strategic viewpoint represented an emulative reaction to US doctrine. American statements on the horrors of nuclear war and the Eisenhower commitment to deterrence may have persuaded Malenkov and others that modern weapons provided a reliable basis for the concept, as well as providing evidence of Washington's recognition of a deterrence relationship with the USSR.

However, it is also conceivable that Malenkov's position was in large part motivated by judgements not unlike those which had inspired the rough American equivalents to some of the Premier's conclusions. It is at least possible that Malenkov's views on the revolutionary strategic significance of nuclear weapons were the result of a personal judgement borne of the Soviet Union's experience in the development of the new technology. Similarly, Malenkov's confidence in the reliability of 'deterrence' may also have been suggested by an independent assessment of the implications of nuclear power for modern warfare. In short, technology, alone and unaided, may well have played

a major role in shaping the Malenkov thesis. In any case, even if the example of American policy played a part in moving Malenkov to the deterrence principle, his recommendation of something like 'minimum deterrence' and his rejection of any possibility of successfully waging a nuclear war, clearly did not mark a faithful emulation of the American 'New Look' policy of 'massive retaliation', a strategy which held little in common with 'minimum deterrence'.

In addition to the suggestive powers of technology, the views of Malenkov and his colleagues were also apparently prompted by internal economic objectives not unlike those which were affecting Eisenhower policy at the same time, moving the United States to a heavy nuclear deterrence bias. While many Americans were arguing that nuclear firepower made a general reduction in US conventional forces possible, as well as a reduction in defence spending, Malenkov contended that nuclear weaponry had substantially increased Soviet strength, greatly reducing the likelihood of a future war and permitting a much increased investment in the civilian or light industrial sect or of the economy. Once again, this view may have been suggested by a personal assessment of the significance of nuclear weapons and a desire to develop a long neglected area of the national economy. Finally, Malenkov's public confidence in the stabilising affect of nuclear weapons may also have been advanced by the Premier's personal political difficulties. Engaged in a struggle with the Party Chairman, it was not undesirable to appear responsible for an expansion in Soviet military power so great as to compel the United States to abandon any idea of war.

Khrushchev's 'anti-deterrence' views from 1953 to 1955 may have reflected a frank analysis of American intentions and the significance

of modern weapons technology. In the USSR's position of very marked nuclear inferiority during the early 1950s, there certainly were grounds for questioning the reliability of deterrence, if only because the Soviet Union lacked the forces to implement the concept effectively. However, the heated leadership battle then in progress makes an evaluation of the origins of the Party Chairman's argument and its origins extremely difficult. The erratic character of his public statements between 1955 and 1957 strongly suggests an intimate relationship between Khrushchev's assessment of the strategic nuclear weapons and his personal political ambitions.

After 1955, Khrushchev's wavering public judgements included the view that Soviet nuclear power had amended the maxim on inevitability of war, constricting the military option available to the United States. His halting approach to something like 'deterrence' may have been prompted by the examples of its acceptance in the United States. Surely in a period of dramatic nuclear imbalance, America was to be encouraged in a commitment to any principle which recognised that the Soviet Union's nuclear capability compelled the avoidance of war. However, as with Malenkov, those of the Party Chairman's statements which credited nuclear weapons with a stabilising or 'deterring' affect, may also have been urged by Khrushchev's personal analysis of the significance of strategic nuclear system for modern warfare, unaided by a prior reading of American strategic doctrine.

Chapter 3

The United States and the 'New New Look'

The Need for a Second New Look

The Limitations of Massive Retaliation

The New Look-massive retaliation policy enjoyed only a very brief period of acceptance before several of its supporters within government began to consider the need for another re-examination of United States' defence policy. The disastrous situation in French-Indochina was one of the factors pointing to the limitations of massive retaliation. The massive retaliation concept was also undermined by the Soviet Union's unexpectedly rapid development of an operational air-nuclear capability. In sharp defiance of American preductions, the USSR acquired a significant thermonuclear arsenal by the middle of the decade. Any future US reliance upon massive nuclear retaliation either to deter or to wage nuclear war would, therefore, have to be reconciled with the knowledge that the Soviet Union commanded expanding strike forces.(1) A major Soviet nuclear capability also promised to inhibit any American attempt to dissuade the USSR from limited conventional aggression. An American threat of massive retaliation in response to a limited conventional advance would retain little credibility in a world of two highly developed nuclear powers. The dawning strategic 'realities' of the early 1960s, therefore, urged a second comprehensive re-examination of American defence policy. In December of 1955, Secretary Wilson, in effect, ordered the beginning of a 'New New Look' when he instructed the Joint Chiefs of Staff to conduct a 'complete and careful' review of the nation's defence needs for fiscal years 1958 through 1960.(2)

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(1) Samuel P. Huntington, The Common Defence. New York: Columbia University Press, 1961, pp.88-90.

(2) Ibid., pp.91-92.

Defence Spending and the Economy

In response to the Secretary's order, the Joint Chiefs reported no need for major changes in military manpower levels or defence programmes. There was also general agreement among both the uniformed and civilian leadership that, while defence spending would have to rise above the $37 billion mark for FY 1956, it need not exceed a ceiling of $38 billion.(3) The stunning Republican Presidential victory in 1956 appeared to endorse the New Look strategy and the continuation of its emphasis on stability in military spending during the second phase of New Look policy.(4) The President spoke of the need for heavier investment in the civilian economy. It was time, he advised, for 'new and expanded programmes' in such domestic projects as education, highways, housing, civil aviation, the merchant marines and 'the expansion of research and training in science, health and agriculture'.(5)

Budgetary Stability v Strategic Superiority: The New New Look Solution

'Sufficiency'

The expansion of Soviet strategic capabilities during the New New Look period placed the Eisenhower Administration under pressure from those urging action to preserve America's absolute strategic superiority either by a further increase in US nuclear strength at the cost of its already diminished conventional forces - the so-called Radford Plan - or by increased defence expenditures which would permit

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(3) Huntington, op. cit., p.93.

(4) Edward A. Kolodziej, The Uncommon Defence and Congress, 1945-1963. Ohio State University Press, 1966, p.239.

(5) Huntington, op. cit., p.91.

higher nuclear force levels without reductions in US general purpose forces.(6) The administration was not persuaded to adopt either of these alternatives. Increased air power with undiminished conventional forces was entirely unacceptable if defence spending was to be kept under firm control. On the other hand, the 'thrifty' route to continued superiority offered by the Radford Plan was rejected on both economic and strategic grounds. Clearly the tremendous cost of maintaining absolute superiority across the full range of weapons systems would eventually consume any savings on conventional costs. The maintenance of overwhelming strategic nuclear superiority in competition with a nation of the USSR's resources would be impossible without endlessly rising defence budgets. Further, the magnitude of Soviet potential - economic and technological - as well as the tremendous destructive power of nuclear weapons, even when deployed in relatively small numbers, drastically reduced the value of any quantitative or arithmetical American advantage. Even with absolute superiority, the United States would be unable to prevent the Soviet Union from seriously damaging urban America in a future war. Hereafter, the Soviet-American strategic relationship would rest upon a 'balance of terror'.(7)

The administration's solution to the problem of restraining defence spending while effectively providing for deterrence was to abandon absolute superiority as a long-term objective in favour of a policy of 'sufficiency'. Rather than squander vast sums on the preservation of a pointlessly long quantitative lead over the USSR,

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(6) Huntington, op. cit., pp.99-100.

(7) Ibid., pp.101-102; Albert Wohlstetter, 'The Delicate Balance of Terror', Foreign Affairs, January 1959, pp.211-234.

America would in future deploy only those forces 'sufficient' to deliver a devastating retaliatory strike against the Soviet Union. The precise requirements of sufficiency would, of course, change as the USSR improved its strategic capabilities. Increases in Soviet strength would meet with appropriate American responses, but there would be no effort to maintain any 'magic' number of aircraft wings or to continually top all Soviet air-nuclear totals regardless of America's actual security needs.(8)

However, even under the sufficiency concept, the US Air Force retained the view that American force levels must be sufficient to 'win' as well as to deter a future war.(9) In support of this 'war winning' objective, the administration remained formally committed to a mixed targeting doctrine which included a large counterforce element. Enemy airfields and missile sites were, therefore, prime targets. In the words of Vice-President Richard M. Nixon, 'I do not believe that a force capable of devastating only cities would be adequate to deter the launching of an attack by those who are now in control in the Kremlin'.(10) America required the power 'to destroy the war-making ability of an enemy'.(11) In addition to the counterforce mission, the Air Force also argued that a successful war effort required a 'pre-emptive' strike capability limiting the damage which would result from a Soviet attack after intelligence sources had confirmed that a Soviet 'first-strike' was imminent. Again quoting the Vice-President, an attack 'to destroy or blunt a large portion' of Russia's strategic forces immediately before launch was 'essential to our survival as a nation'.(12)

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(8) Huntington, op. cit., pp.101-102.
(9) NYT, November 27, 1960, Section IV, p.5.
(10) NYT, October 30, 1960, p.1.
(11) Ibid.
(12) NYT, November 2, 1960, p.30; Also see NYT, December 1, 1960, p.16; NYT, January 14, 1961, p.7.

Missile-Deterrent Gap.

As well as coming under fire for its attachment to sufficiency, the administration was also criticised in the New New Look period for failing to provide adequately for its now only 'sufficient' requirements. Eisenhower planners were charged with having failed to deploy sufficient strength to deny the USSR a first-strike counterforce capability.(13) These charges were seemingly substantiated in August of 1957 when the Soviet Union successfully launched a long-range ballistic missile and again on October 4 of the same year when the USSR orbited an earth satellite.(14) Sputnik I proved a shattering experience for many Americans, ending the assumption of permanent US technological primacy and seeming to portend a highly dangerous shift in the balance of power.(15) The Soviet ICBM coup gave rise to a number of predictions of a perilous 'missile gap' or 'deterrent gap' between the United States and the USSR.(16)

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(13) Huntington, op. cit., p.104. On the debate over the requirements of deterrence - 'maximum' counterforce strategy versus 'minimum countercity' - see Herman Kahn, On Thermonuclear War. Princeton, N.J.: Princeton University Press, 1960; Henry Kissinger, The Necessity of Choice. New York: Harper, 1960; Huntington, op. cit., pp.102-104; Robert Gilpin, American Scientists and Nuclear Weapons Policy. Princeton, N.J.: Princeton University Press, 1962, pp.279-289; NYT, February 1, 1959, Section IV, p.3; NYT, May 4, 1959, p.23; NYT, January 12, 1961, p.12.

(14) Huntington, op. cit., pp.108-109.

(15) Kolodziej, op. cit., p.251.

(16) On the 'missile gap'-'deterrent gap', controversy, see Herbert York, Race to Oblivion. New York: Simon and Schuster, 1970, pp.125-146; Edgar M. Bottome, The Balance of Terror. Boston, Mass.: Beacon Press, 1971, pp.39-73; Elizabeth Young, A Farewell to Arms Control? Middlesex: Penguin Books, 1972, pp.167-175; George H. Quester, Nuclear Diplomacy. New York: Dunellen, 1973; NYT, January 29, 1960, p.6; NYT, April 5, 1960, p.22; NYT, October 24, 1960, p.7. The Reports of the Gaither Committee and the Rockefeller Brothers Fund in 1957 appeared to substantiate the predictions of America's decline to the rank of a second-class power. See Morton H. Halperin, 'The Gaither Committee and the Policy Process', World Politics, April 1961, pp.360-384; Huntington, op. cit., pp.107-108; Gilpin, op. cit., p.172; Kolodziej, op. cit., pp.274-275.

Responding to the 'missile gap' accusations, the Pentagon admitted a Soviet lead in ICBM development, but expressed no great alarm at the prospect of Soviet superiority in long-range missiles. Defence Secretary Neil McElroy explained that America was not going to enter into any quantitative ICBM competition with the USSR, arguing that even a three-to-one Soviet advantage in the early 1960s was not unacceptable.(17) In 1960 the administration seemed increasingly reluctant to concede the existence of a 'missile gap'. Although spokesmen sometimes appeared to make qualified admissions of US inferiority, at least implied 'missile gap' denials were also issued. Mr. McElroy's successor as Secretary of Defence, Thomas Gates, cast doubt on the 'missile gap' charges on more than one occasion, but conceded that should the Soviet Union choose to produce ICBMs at its full estimated capacity, the USSR could achieve and maintain a 'moderate numerical superiority' for perhaps three years.(18) However, soon thereafter, he announced that intelligence sources indicated that the USSR had not begun a 'crash programme' to produce ICBMs.(19)

Whether or not an operational 'missle gap' already existed or would soon develop, the administration consistently denied that such a gap would affect America's very substantial overall strategic superiority. Even with a 'missile gap', there certainly would be no 'deterrent gap', as the basis of American supremacy lay in the overwhelming power of a 'balanced weapons mix. President Eisenhower

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(17) Huntington, op. cit., p.104.

(18) NYT, January 22, 1960, p.4.

(19) NYT, March 17, 1960, p.1.

described US military strength as representing 'an indestructible force of incalculable power', composed of hundreds of bombers, Atlas intercontinental missiles and the first of an emerging fleet of Polaris submarines (the strategic 'triad'). The President rejected any need for catching up with the Russians in strategic power, saying: 'A deterrent has no added power once it has become completely adequate for compelling the respect of any potential opponent'.(20) Secretary Gates also frequently refuted the 'deterrent gap' charge, explaining that there was no need for America to match the Soviet Union weapon for weapon.(21)

'Missile Gap' Force Levels

In the FY 1958 defence budget, the Air Force suffered a reduction in its total strength from 137 to 128 wings, a cut which, however, only disadvantaged Army missions. By the end of 1958 the Air Force was to command 603 B-52 bombers, a force to be augmented by an accelerated ICBM and IRBM effort. Two billion dollars were assigned to missile purchases and another $4.2 billion to aircraft procurement, marking a small reduction from the figures of the previous year.(22) The major budgetary reaction to Sputnik came in a $1.37 billion supplemental bill to the FY 1958 defence budget which, in fact, appeared after the submission of FY 1959. The additional money was assigned to speeding the development, procurement and dispersal of strategic bombers as well as alert systems and air defence communication and control equipment. There was also to be an

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(20) NYT, February 4, 1960, p.1.
(21) NYT, March 17, 1960, p.1.
(22) Kolodziej, op. cit., p.241.

intensification of the Atlas, Polaris, Jupiter and Thor programmes.(23)

The FY 1959 budget proposals totalled $39.1 billion in appropriation and $39.8 billion in expenditures, marking only a small increase over FY 1958, regardless of the disquieting news from the USSR. The general shape of the FY 1959 proposals did not dramatically differ from that of FY 1958. Weapons, ships, planes, missiles, atomic energy, research and development, were all to be supported by $21.6 billion, marking an increase of one billion dollars over the previous year.(24) Subsequent appropriation requests included $1.75 billion in new obligational authority, plus another $600 million in June of 1958. Expenditures for FY 1959 eventually surpassed those of FY 1958 by about $1.7 billion.(25)

Despite the proven Soviet ICBM capability, the administration's defence programme for FY 1960 stressed strategic air power, improved through increased aircraft and airborne weapons deliveries, as well as the retirement of obsolescent bombers. Eleven heavy bomber wings of forty-five B-52s each were to be in service during FY 1960 and a twelfth was in the planning stage. There was to be an increase in aircraft authorisation from $5.9 to $6.2 billion, but a fall in obligational authority for missiles from $4.2 to $3.5 billion. The USSR was thought effectively deterred by forty-three strategic bomber wings, along with IRBMs on sites in Turkey, Italy and the U.K. The administration conceded Soviet superiority in long-range missiles, but explained that the flagging Soviet ICBM programme reduced the USSR's lead to less than critical significance. In any case, the United States did not intent to match the Soviet Union missile for missile.(26)

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(23) Kolodziej, op. cit., pp.277-278.

(24) Ibid., p.277.

(25) Ibid., p.278.

(26) Ibid., pp.288-289.

In about 1959 the United States decided against any heavy deployment of its first-generation liquid-fuelled ICBM. The Atlas was judged to be expensive and, as a result of its lengthy fuelling procedure, vulnerable to a Soviet first-strike. The solid fuelled Minuteman, then under development, was instead chosen as the mainstay of American land-based missile forces. In the period before the large-scale deployment of ballistic missiles, the US nuclear deterrent would be entrusted to American bomber aircraft and a small force of first-generation ICBMs.(27)

Overall defence spending for FY 1961 closely resembled the FY 1960 budget. As concerns strategic airpower, SAC suffered yet another reduction in its force levels, falling from forty to thirty-eight wings. The total number of combat wings was to sink from ninety-six in FY 1960 to ninety-one in FY 1961. This compared with a force of 105 wings in FY 1959. R & D programmes were to be supported by $3.9 billion, approximately the figure for the previous year. The nation's ICBM capabilities were to be strengthened by fourteen Titan and thirteen Atlas squadrons, for an increase of seven squadrons over FY 1960, an improvement partially financed by additional funds appropriated by Congress in FY 1960. Six Polaris submarines, combined with another six approved in April, were to join a fleet of twenty-one nuclear submarines. Additional ICBM appropriations further enlarged the Atlas and Minuteman programmes. The administration also announced the approval of a Pentagon effort to 'begin to acquire a standby alert capability for heavy bombers'. However, in April President Eisenhower also approved a $600 million reduction in funds provided for the BOMARC missile and the Semi-Automatic Ground

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(27) Bottome, op. cit., p.47; Quester, op. cit., pp.193-194.

Environment (SAGE) air defence system. The B-70 bomber project was to proceed no further than the developmentaof two prototype aircraft.(28)

The administration did not concede the existence of an operational 'missile gap', but admitted that intelligence sources indicated a possibility, albeit unlikely, of a three-to-one Soviet ICBM superiority between 1960 and 1963. Even in such circumstances, however, no 'deterrent gap' would develop as America's balanced mix of bomber and missile forces would remain heavily superior to Soviet strength, thus assuring an effective US deterrent.(29) On August 1, 1960 the B-70 bomber, the Samos and the Polaris, along with the Army's reserve and modernisation programmes were awarded another $476 million of $1.097 billion which had formerly been frozen. Of this $476 million, $164 million went to enlarge the number of fully and partially funded Polaris submarines to five ships in each category. The remaining portion of the $1.097 billion was to remain frozen and another $979 million was to be temporarily frozen pending a review of FY 1961 programmes. October 1 brought another $169 million to Polaris, Samos and Army modernisation, followed by additional funding for anti-submarine warfare and the B-70 bomber, now advanced from a prototype status to that of a complete weapon system. The President's proporals for FY 1962 requested $358 million for the B-70 project.(30)

At the close of the Eisenhower Administration, the United States commanded nearly 600 B-52 bombers, some 1,200 B-47s capable of in-flight refuelling, more than 200 aircraft based aboard fourteen attack

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(28) Kolodziej, op. cit., pp.311-312.

(29) Ibid., pp.312-313.

(30) Ibid., pp.323-324.

carriers and an unknown number of fighter bombers able to deliver nuclear weapons from a network of US bases around the world.(31) The Shark cruise missile with a range of 5,000 miles had also been developed but was cancelled after the production of only thirty weapons.(32) Four Thor squadrons and three Jupiter squadrons were produced for deployment in Britain, Italy and Turkey. The Atlas ICBM had reached operational status. The Titan and Minuteman missiles were under development and a programme for the hardening of ICBM sites was initiated.(33) About seventeen of the surface launched Regulus cruise missiles, with a 500 mile range, were fitted aboard five submarines, while others were deployed aboard surface ships.(34) Finally, the first Polaris missiles were deployed aboard the George Washington in November of 1960.(35)

Strategic Defence

The administration's policy on air defence in the late 1950s showed no remarkable sense of urgency. Each year the Air Force cruise missile Bomarc entered into a competition for defence funds with the Army's Nike-Hercules. Nike-Hercules and the earlier Nike-Ajax had received $3.9 billion by the close of 1959, while $1.9 billion had been invested in Bomarc.(36) Under Congressional pressure to choose one of the other system for FY 1960, the administration decided to reduce

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(31) Bottome, op. cit., pp.51-52.

(32) Quester, op. cit., p.158; Ernest G. Schwiebert, A History of the US Air Force Ballistic Missiles. New York: F.A. Praeger, 1965, pp.52-53.

(33) H.B. Moulton, From Superiority to Parity. Westport, Conn.: Greenwood Press, 1973, p.41.

(34) Quester, op. cit., p.158.

(35) Also on Eisenhower missile development, see Charles H. Donnelly, The United States Guided Missile Programme. Washington, D.C.: Government Printing Office, 1959; James Barr and Willian Howard, Polaris. New York: Harcourt Brace, 1960; John C. Chapman, Atlas: The Story of a Missile. New York: Harper and Bros., 1960; York, op. cit., pp.94-101.

(36) Kolodziej, op. cit., p.304.

spending on anti-bomber defence, while recommending a Nike-Hercules and Bomarc deployment mix, with Nike-Hercules playing the greater role.(37) Proposals for the FY 1961 budget brought a reduction of nearly $600 million in the funds for the Bomarc and SAGE systems. These reductions, plus the cancellation of the F-108 fighter programme were made possible, Defence Secretary Thomas Gates explained, by the failure of Soviet bomber strength to expand as rapidly as had been expected.(38)

American research into anti-missile defence began in the early 1950s. By 1956 the United States army was prepared to deploy its Nike-Zeus anti-missile system, with its elaborate, primitive and mechanically operated radars, incapable of dealing with more than one re-entry vehicle at a time, and highly vulnerable to saturation attacks.(39) While the Eisenhower Administration was prepared to support the Nike-Zeus project with research funds, it consistently refused to authorise anything more than an R & D effort. It annually rejected any suggestion of deployment or advanced production as well as General Maxwell Taylor's argument that at least those Nike-Zeus components requiring a long lead time be placed into immediate production. The administration view remained that the high projected deployment costs, as well as the very dubious effectiveness of Nike-Zeus, warranted no more than a research and development programme. However, the installation of the Ballistic Missile Early Warning System (BMEWS), designed to provide a twenty minute warning of an ICBM attack, was accelerated.(40)

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(37) Kolodziej, op. cit., p.306.
(38) NYT, April 22, 1960, p.8.
(39) The Safeguard ABM System. Washington, D.C.: American Enterprise Institute, June 2, 1969, p.2.
(40) R.E. Lapp, Arms Beyond Doubt. New York: Cowles Book Co., 1970, pp.39-40; York, op. cit., p.120. On the controversy over strategic defence in this period, see NYT, May 31, 1959, Section IV, p.4; NYT, April 21, 1960, p.7.

Limited War Capabilities under the New New Look

The Need for Increased Capabilities

Although the Eisenhower administration never abandoned its commitment to massive nuclear power as the basis of America's deterrence strategy, U.S. policy affecting nuclear weapons and the massive retaliation concept were modified to include the concept of 'graduated (nuclear and non-nuclear) deterrence', or 'the capability of making the punishment fit the crime'.(41) In 1955 Eisenhower planners acknowledged 'for the first time ... the possibility of a condition of mutual deterrence and the importance in such a period for the United States to have versatile, ready forces to cope with limited aggression'.(42) In January of 1959 the President formally modified the massive retaliation strategy in its heavy emphasis on nuclear weapons as a near cure-all for every conceivable security problem. The President described American defence policy as striving 'to prevent war in any place and in any dimension', meaning the capability to fight at all combat levels.(43) This pronouncement initiated at least in form, if not in substance, a further official move from the Dulles position which

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(41) NYT, November 27, 1960, Section IV, p.5.

(42) Huntington, op. cit., p.105.

(43) NYT, January 11, 1959, p.14; This presidential statement in 1959 was by no means the first qualification of the massive retaliation doctrine issued by an administration spokesman. In March of 1954, John Foster Dulles denied that the new policy implied that the United States was committed to an automatic nuclear response to any act of aggression but only required that the United States maintain the capability for instant nuclear retaliation (NYT, March 17, 1954, p.1). In the following year the President explained that the United States would not normally use nuclear weapons in a 'brush-fire' war (NYT, January 13, 1955, p.1).

had appeared to oppose any serious preparations for wars of less than nuclear scope.(44) At the same time, Secretary of Defence, Neil McElroy, asserted that the United States had sufficient conventional power to 'sit in', contain the fighting and stop the spread of local warfare.(45)

However, despite the recognition of the need for conventional forces and frequent assertions of America's already adequate non-nuclear capabilities, the administration did not provide the increased strength required to support its growing official awareness of the limited war problem. Rather than act upon the counsel of those arguing for a conventional build-up, in FY 1958 Army manpower was scheduled to fall below the one million-man mark.(46) FY 1959 saw further cuts in military manpower including the Army's loss of a division, the disappearance of several tactical air wings and cuts in the troop levels of all the military services.(47) These reductions, the President again explained, were made possible by - 'The greatly increased firepower of modern weapons and the continuing increase in efficiency ...'.(48) Fy 1960 brought a distribution of defence funds among the services similar to that of the previous fiscal year: 46% of the military budget for the Air Force; 28% to the Navy and Marine Corps; and 23% for the Army - approximately the same apportionment in effect since FY 1955.(49) A proposal by General Taylor for an Army of 925,000 men organised into fifteen divisions was undercut by 55,000 troops, resulting in the dissolution

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(44) NYT, January 11, 1959, p.14.
(45) NYT, January 17, 1959, p.1.
(46) Kolodziej, op. cit., p.239.
(47) Huntington, op. cit., p.110.
(48) Kolodziej, op. cit., p.278.
(49) Ibid., pp.287-288.

of an Army division. Of the four divisions held in strategic reserve in the USA, one was eliminated and two others assigned to training. The administration proposed a 10% cut in the reserve and reduced the deployment rate for surface-to-air missiles intended to provide air defence for ground troops.(50) In FY 1961 there were no significant changes in administration policy. The defence spending programme of FY 1960 was continued along with the reductions in military personnel.(51)

Tactical Nuclear Weapons

While the growing official recognition of the limited war problem in the New New Look years did not result in an increase in US conventional forces, it did bring a modification in the role of nuclear weapons. In the New New Look period, the administration completed the move - already begun earlier in the decade - to tactical nuclear weapons as the answer to the need for a substantial limited war capability. In place of large and highly expensive standing armies and tremendous reserves of troops and equipment, the administration chose to rely on what was thought to be the tremendous 'combat capability' of the latest refinements in nuclear weapons technology.(52) In March of 1955 statements by both the President and

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(50) Kolodziej, op. cit., pp.293-294.

(51) Ibid., p.311. Works dealing with the limited war issue or commenting on administration policy include, Robert E. Osgood, Limited War; Henry A. Kissinger, Nuclear Weapons and Foreign Policy. New York: Harper and Bros., 1957; Thomas C. Schelling, 'Bargaining, Communication and Limited War', Journal of Conflict Resolution, March 1957, pp.19-36; Dean Acheson, Power and Diplomacy. Cambridge, Mass.: Harvard University Press, 1958; Bernard Brodie, Strategy in the Missile Age. Princeton, N.J.: Princeton University Press, 1959; General James Gavin, War and Peace in the Space Age. London: Hutchinson, 1959; General M.D. Taylor, The Uncertain Trumpet. New York: Harper and Bros., 1959; Hanson W. Baldwin, 'Limited War' in Walter F. Hahn and John C. Neff, eds., American Strategy for the Nuclear Age. Garden City, New York: 1960; Henry A. Kissinger, 'Limited War: Conventional or Nuclear?', Daedalus, Fall 1960, pp.800-817; Morton H. Halperin, Limited War in the Nuclear Age. New York: John Wiley and Sons, 1963; Also see the NYT, March 21,

the Secretary of State described a doctrine of 'limited' atomic war to be implemented by tactical or 'precise' weapons launched against military targets, marking a further elaboration of the responsibilities of atomic weapons and an increasing reliance upon atomic power.(53) Speaking of the capabilities of tactical atomic weapons, President Eisenhower expressed full confidence in the ability of American armed forces to employ atomic power with a high degree of precision. The President explained: 'Where these things (tactical atomic weapons) are used on strictly military targets and for strictly military purposes, I see no reason why they shouldn't be used just exactly as you would use a bullet or anything else'.(54) In 1957, Secretary Dulles said:

> Recent tests point to the possibility of possessing nuclear weapons the destructiveness and radiation affects of which can be substantially confined to predetermined targets. In the future, it may thus be feasible to place less reliance upon deterrence of vast retaliatory power. It may be possible to defend countries by nuclear weapons so mobile or so placed, as to make military invasion with conventional forces a hazardous attempt. (55)

In the same year, Defence Secretary Charles E. Wilson described American defence policy as:

1955, p.1; January 12, 1959, p.1; April 18, 1959, p.6; June 17, 1959, p.1; July 5, 1959, p.36; January 2, 1960, p.2.

(52) NYT, January 20, 1957, Section IV, p.9.

(53) NYT, March 17, 1955, p.5.

(54) Ibid., p.1.

(55) William W. Kaufmann, The McNamara Strategy. New York: Harper, 1964, p.26.

> ... based on the use of atomic weapons in a major war and is based on the use of such atomic weapons as would be militarily feasible and usable in a smaller war, if such a war should be forced upon us. In other words, the smaller atomic weapons, the tactical weapons, in a sense, have now become the conventional weapons. (56)

Speaking of 'measured retaliation', Air Force Secretary Donald A. Quarles warned that an American nuclear response to Soviet aggression must not involve 'excessive action'. He advised: 'We must not be triggered automatically into widespread atomic reaction by limited aggression. Rather we should choose our weapons carefully, place them accurately on forces directly engaged in aggression and cease their application as soon as aggression is defeated'.(57) Quarles rejected the charge that the use of atomic weapons in a limited war would necessarily lead to a full-scale thermonuclear exchange. Far from enlarging a limited struggle, the use of atomic weapons at relatively low combat levels was - '... a programme to make a short war out of one that might otherwise drag on, as in Korea, until America suffered more than 140,000 casualties and our friends fighting to preserve their freedom suffered over a million casualties'.(58)

Aware that those services with an atomic role were those most favoured in administration defence budgets, Army commanders did not resist the introduction of tactical atomic weapons into the ground forces. Indeed, General Maxwell Taylor spoke of the re-organisation of the Army into pentomic units, and in 1958 explained: 'We must always have these smaller weapons because the big atomic bang would not be applicable to all situations by any manner or means'.(59)

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(56) William W. Kaufmann, op. cit., p.25.

(57) NYT, September 27, 1956, p.19.

(58) Ibid.

(59) Kolodziej, op. cit., p.247.

As early as 1954 the North Atlantic Council advised NATO commanders to plan for the defence of Europe on the assumption that tactical nuclear weapons would be used by the West. In 1956 President Eisenhower formally issued a similar directive to American strategic planners, the same year in which the United States announced the activation of its first Army division capable of fighting with nuclear weapons. In 1957 NATO made clear that its ground armies were 'nuclear' forces and approved the introduction of American controlled nuclear weapons into NATO forces in Europe. By the end of President Eisenhower's tenure, tactical nuclear power occupied a central position in NATO strategy, representing an allegedly effective and economical response to Soviet conventional 'superiority' in the European theatre.(60)

Forces-in-Being

The New New Look was also marked by an increasing commitment to a forces-in-being deterrence posture, as opposed to the traditional mobilisation base concept. Stores of weapons and equipment were reduced and alternatives supply sources abandoned as the 'traditional concept of a prolonged industrial build-up after attack' was replaced by 'a "readiness" programme'.(61) The emphasis on readiness and economy also brought change in the official attitude toward reserve forces. Whereas in the early New Look they were regarded as a money-saving alternative to large active armies, in the New New Look they appeared far less economical than had been hoped. As a result,

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(60) NYT, January 20, 1957, Section IV, p.9; Alain C. Enthoven and K. Wayne Smith, How Much is Enough? New York: Harper and Row, 1971, pp.120-121.

(61) Huntington, op. cit., p.97.

in December of 1956 the administration declared its intention to cut the numbers of reserve troops and to improve the quality of those remaining.(62) This was to be done in recognition of the fact that 'new strategic plans and concepts make obsolete many previous plans for development and utilisation of Reserve Forces'. The reserve system had to be reformed 'in order to prevent runaway costs and to bring Reserve and Guard units into line with current military planning and requirements'.(63)

Assessment of the Role of 'Action-Reaction' in the Development of the New New Look

Evidence of Reaction

Much that can be labelled as responsive to Soviet actions in US defence policy during the later 1950s, can be so described if instances of American reaction are permitted to include 'responses' based upon estimates of the USSR's strategic potential, estimates derived from demonstrated Soviet capabilities. In other words, although the Soviet Union may not have fully attained a given capability, or may never have intended to act in deployment terms as anticipated by US analysts, the assumption that the USSR would fully exploit an already existing capability often affected American decision-making on defence issues.

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(62) Huntington, op. cit., pp.98-99.

(63) Ibid., p.98.

Motivations for a New New Look

Although the heavy Eisenhower emphasis on nuclear weapons came under critical fire from the birth of the New Look, during the latter half of the 1950s the case for a revision of American policy was clearly strengthened by external events. The still recent French defeat in Indo-China, added to America's Korean experience, argued for larger conventional forces. More important, the progress of Soviet strategic development stimulated a re-examination of US policy. The expansion of the Soviet strategic arsenal during the 1950s and the obvious Soviet capacity for further growth, moved American planners to reconsider a strategy based upon absolute strategic superiority and the ability to deliver a massively destructive, largely disarming, nuclear strike. In other words, the re-assessment of US defence policy resulting in a New New Look was, in part, a reaction to increased Soviet nuclear strength or, at the very least, a reaction to a demonstrated Soviet capability, added to American estimates of the USSR's potential for development as a fully qualified strategic nuclear power.

Sufficiency

The course of Eisenhower defence policy after the initiation of a second New Look remained largely faithful to the administration's original objectives. Nevertheless, the New New Look displayed evidence of responsiveness to Soviet actions and potential capabilities during the latter half of the 1950s. The rejection of the Radford Plan and absolute superiority stemmed from the view that the Soviet Union could no longer be denied a major nuclear strike capability,

leaving the United States with only a numerical advantage of limited value. Even from a position of substantial superiority, the United States would be unable to prevent the USSR from seriously damaging America's largest cities. The New New Look, therefore, 'responded' to Soviet nuclear development by declaring that, in future the USA would only seek to maintain force levels 'sufficient' to deliver a shattering retaliatory blow. While any increase in Soviet force levels would be met with corresponding American countermeasures in support of sufficiency, the United States would not attempt to retain absolute superiority for the sake of superiority or engage in a pointless effort to surpass the totals of all Soviet strategic weapons.

In addition to appearing effectively unobtainable, superiority also appeared undesirable as it violated the administration's most important domestic principle - balanced national budgets through tightly restrained defence spending. In the first Eisenhower term, reliance upon overwhelming atomic superiority seemed the surest route to economy. In the second term, the Soviet Union demonstrated that overwhelming nuclear superiority would require unending increases in defence spending which would prove anything but an exercise in thrift. Sufficiency was, therefore, the only means to both military and economic security.(64)

Although the United States in the New New Look period shifted its declaratory position on the superiority issue, in operational terms America was to retain a long air-nuclear lead over the USSR throughout the 1950s. Indeed, the United States was not to reach the high point

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(64) Huntington, op. cit., p.102.

of its overall advantage until the early 1960s. However, continuing American superiority in the Eisenhower years may have had as much or more to do with Soviet inaction or moderation as any American attempt to remain top of the nuclear league. While the acceptance of sufficiency might, therefore, be regarded as an important stage in the development of US doctrine and a significant modification of the American deterrence concept, it did not alter the realities of the strategic nuclear 'balance'.

The 'Missile Gap' and US Force Levels

Eisenhower policy affecting US force levels after the launch of the Soviet Union's first ICBMs revealed clear evidence of responsiveness to Soviet actions both in those 'counter-balancing' measures which the administration chose to adopt, as well as in those which it chose to reject. In reaction to the Soviet lead in missile technology, and the general uncertainty as to Russian deployment plans, the administration ordered the acceleration of those American missile programmes already in progress and deployed a number of IRBMs in Europe. The alert status of the Strategic Air Command was increased and the quality of SAC's bomber force improved.

Nevertheless, the Defence Department refused to grant the existence of a 'missile gap' in operational terms, arguing that the USSR had not, in fact, undertaken a crash programme of missile production. In the absence of an all-out Soviet effort, the administration declined to 'react' to an ICBM 'threat' which was largely confined to the pages of the American press. Indeed President Eisenhower not only rejected

demands for frenzied missile production but decided against any major deployment of American first-generation liquid-fuelled weapons. He instead chose to rely on SAC as the basis of the nation's deterrent until second-generation ICBMs and Polaris missiles became operational in the 1960s. Convinced by its assessment of Soviet-American force levels that the US strategic advantage remained enormous, and required no major reinforcement, the Eisenhower Administration responded to the meagre level of Soviet deployments by refusing to bolt from its established policy.

Mixed Targeting Doctrine

The American commitment to a mixed targeting doctrine was the product of several factors. These included the proximity of military bases to civilian centres and the conviction that both credible deterrence and effective war-waging required the ability to deliver a devastating assault on the foundations of an enemy society. A narrow concentration on a single target type was inadequate for maintaining the peace or 'winning' a war. However, US adherence to a mixed targeting doctrine can also be explained as in some measure, a response to Soviet strategic development which, it was suspected, involved the concealment of military installations throughout the vast expanse of Soviet territory. A counterforce strike was plainly unworkable if the Strategic Air Command could not locate all of the USSR's bomber and missile sites. Further, even if their locations were suddenly to be discovered, the projected expansion of Soviet missile forces was expected to make any truly effective counterforce blow impossible. Nevertheless, for the time being, the Soviet deployment of a nuclear capability which was certainly significant but not yet equivalent to that of the United States argued for the retention of a substantial number of counterforce operations in a damage limitation role.

Bomber Defence

In the latter half of the 1950s, the Eisenhower Administration refused to satisfy demands for much improved air defences. Despite armed service pressure, defence budgets in this period failed to include large anti-bomber expenditures, offering evidence of American responsiveness to an unexpectedly low level of Soviet investment in long-range aviation. While approving considerable spending for research into anti-air systems, the final Eisenhower budget (FY 1964), reduced air defence expenditure and cancelled the F-108 aircraft on the grounds that the Soviet bomber force had not expanded at the rate anticipated by American analysts earlier in the decade.

Limited War

The modifications of at least the declaratory American doctrine affecting limited war - publicly accepting the need for a wider range of military capabilities - can also be seen as a reaction to the USSR's growing nuclear strength coupled with her still large non-nuclear forces. Since its first unveiling, the New Look had been attacked for its strategic nuclear 'obsession'. The force of these attacks was certainly increased by the apparently imminent emergence of the USSR as both a major nuclear and conventional power. However, while the Soviet Union may well have spurred a further refashioning of the earliest form of the massive retaliation doctrine, the character of that modification took a distinctly American or Eisenhower form, failing to emulate Soviet doctrine or deployments.

The improvement in the declaratory status of limited war forces was not matched by a corresponding increase in non-nuclear defence spending or deployments. On the contrary, defence budgets under the New New Look largely maintained general purpose expenditures at established levels, while authorising reductions in manpower and tactical aircraft. Rather than 'match' Soviet conventional strength, an option firmly prohibited by the administration's economic objectives, the United States instead increased its already considerable reliance on nuclear weapons, placing the additional fire-power of tactical nuclear weapons, as well as theories of limited nuclear warfare, in the balanced against the Soviet Union's conventional forces. In so doing, the administration 'responded' to its perception of Soviet developments in a manner faithful to both its technological and economic convictions.

Evidence of the Influence of Domestic Factors in the Formation of New New Look Policy

Budgetary Principles

Although there is clear evidence of American responsiveness to Soviet actions in the New New Look period, US strategic doctrine and deployments clearly did not amount to a reflexive reaction or emulation of Soviet Policy. It obviously would not have served the domestic political interests of President Eisenhower and his colleagues to display great concern over Soviet missile developments, particularly as the 1960 election approached. Nevertheless, the administration, in fact, held to the broad outlines of its established policy in the face of dramatic Soviet actions which provoked intense

criticism of Eisenhower policy and a general state of alarm in the United States. Under heavy public pressure to rush into the breech of missile and deterrent 'gaps', the administration refused to abandon its commitment to restraint in defence spending. Throughout the entire course of President Eisenhower's tenure defence spending never rose more than $7 billion over the early New Look limit, or more than $3 billion over the New New Look ceiling set before the launch of Sputnik I. Further, approximately half of the increase in defence expenditure over the $38 billion lebel from FY 1958 to FY 1961 was the result of inflation rather than programme expansion.(65)

Continuing Nuclear Bias

During the New New Look period the general character of American defence policy and the state of the deterrence concept in particular, retained - in fact increased - its strong nuclear bias. Throughout the Eisenhower years the American concept of deterrence was expressed largely in air-nuclear terms, as the administration persistently refused to increase the nation's conventional strength and assigned a major 'conventional' role to tactical nuclear weapons. Indeed even the New Look's commitment to reserve forces as an economical substitute for active manpower was diminished during the latter half of the 1950s.(66) Both deterrence and effective national defence were now all but universally seen to require the permanent maintenance of combat-ready forces-in-being. The final completion of the shift to nuclear deterrence was largely motivated by the same technological and economic motives which had originally inspired the New Look policy during the first Eisenhower term.

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(65) Huntington, op. cit., p.97.

(66) Ibid., pp.97-99.

US Force Structure

As well as declining to lurch into a major build-up of US nuclear forces, the Eisenhower Administration also remained faithful to its plans for a 'mix' or 'triad' of strategic systems - offering a blend of land-based missiles, submarine launched weapons and long-range bombers as the basis for its confident rejection of the 'deterrent gap'. Despite the view that Sputnik I had foretold the obsolescence of manned bombers, the United States held to the judgement that strategic aviation retained a high degree of effectiveness which, together with the nation's emerging arsenal of ground and sea launched missiles, provided a 'balanced' and invulnerable deterrent force. This balance, far from allowing for even the prospect of America's strategic inferiority, confirmed the United States as the superior strategic nuclear power.

Ballistic Missile Defence

During President Eisenhower's second term of office the United States also consistently adhered to its unenthusiastic assessment of ballistic missile defence, despite the Soviet Union's heavy stress on the ICBM as its major nuclear delivery vehicle. Although the administration's generally negative attitude to anti-ballistic missiles was surely influenced by its clear and comforting understanding of the USSR's actual operational ICBM capability, the refusal to deploy an ABM system or even to produce its long lead-time components, was to a significant degree, based upon the cost estimates of missile defence and the still formidable technical problems involved in resisting a ballistic missile attack.

State of the American Deterrence Concept during the New New Look and the Role of Action-Reaction in its Development

The New New Look and Deterrence

Although there were strong similarities between the New Look and the New New Look policies, during the later 1950s important modifications were introduced into American deterrence doctrine, further refashioning the original massive rataliation strategy. The Eisenhower presidency had begun with a commitment to overwhelmingly superior offensive strength designed to destroy and largely disarm the Soviet Union in a massive nuclear strike. In contrast the New New Look's doctrine of sufficiency satisfied itself with forces enjoying some margin of general or overall superiority, but not necessarily exceeding Soviet force levels in every weapons category.

More important than the alleged end of the 'numbers game', the abandonment of absolute superiority conceded that the United States would soon be unable to deny the Soviet Union a massive strike capability. In so doing, the Eisenhower Administration shifted the basis of American deterrence. In the early 1950s, deterrence had been expressed in the ability to crush and instantly disarm the USSR without great risk to the United States or, in other words, upon the capacity to decisively and unequivocally 'win' a full-scale nuclear war. During the New New Look period, deterrence continued to be supported by still vastly superior nuclear forces, providing the United States with the safety and satisfaction of a broad, although diminished, margin of strategic advantage and a still undeniably effective war-waging capability. However, the doctrine of sufficiency acknowledged that 'absolute security' through absolute superiority was no longer obtainable. American vulnerability to nuclear attack was already established and would inevitably increase with the expansion of the

USSR's strategic forces. In future, the United States would no longer simply 'deter' but would itself be 'deterred' by the Soviet Union. Clearly therefore, the only realistic basis for American deterrence in the 1960s would be a Soviet-American relationship of 'mutual deterrence' founded upon a 'balance of terror'.

The New New Look's conception of deterrence was further modified by the emergence of theories of limited warfare. In the first burst of its New Look policy, the administration seemingly regarded strategic nuclear power as providing for most of the nation's deterrence and defence needs. The later 1950s brought a clearer official acknowledgement of the need for capabilities below the level of full-scale conflict which was much encouraged by the implications of the Soviet Union's accelerating strategic capabilities. The gradual erosion of American superiority critically undermined any exclusively nuclear barrier to a Soviet conventional challenge. A major expansion in US general purpose forces would have marked a direct emulative reaction to the apparently deteriorating effectiveness of nuclear deterrence. However, rather than attempt to deter or prepare to wage limited war with enlarged conventional forces, the New New Look instead chose to confer conventional status on nuclear weapons of the tactical type, injecting nuclear fire-power into ground Army units in place of additional manpower.

Action-Reaction

Clearly the Soviet role in the development of American deterrence doctrine during this period was very considerable. The disconcertingly rapid growth of Soviet strategic capabilities and the prospect of something like nuclear parity emerging between the USSR and the USA strongly urged a modification of the original New Look -

massive retaliation policy. The expansion of the USSR's strategic nuclear forces not only suggested the need for a revision of doctrine affecting full-scale conflicts, but also compelled a review of limited war planning. Some kind of change was all but unavoidable; however, the nature of the specific modifications eventually adopted by the United States was not determined by Soviet actions and strategic potential alone.

The United States could have responded to the USSR's growing nuclear strength in the manner proposed by some of the New New Look's critics. It could have accepted substantial increases in American nuclear forces designed to retain a dramatic margin of superiority, while maintaining or even expanding US general purpose forces. Instead the administration chose to renounce superiority and further reduce its conventional forces - both active and reserve. Far from helplessly re-drawing its defence policies at the direction of the Soviet leadership, the United States was in large part, moved by its own domestic objectives and priorities to accept 'sufficiency' and a 'conventional' strategy incorporating tactical nuclear weapons.

In other words, the Eisenhower administration was encouraged to declare limits to the proportions of US strategic nuclear forces, as well as to expand the responsibilities of tactical nuclear weapons by the very firm conviction that the national security demanded a tight grip on defence spending. The failure to enlarge US general purpose forces was even more clearly a consequence of the administration's budgetary pre-occupation than was its relative nuclear restraint. Despite the undiminished validity of such concepts as superiority and victory within the context of conventional warfare, the New New Look again chose to honour the budget before the example of Soviet policy by adopting tactical nuclear weapons as an 'economical' alternative to the allegedly more powerful ground armies of the USSR.

Chapter 4

Khrushchev and the 'Minimum Deterrence' Solution

Strategic Doctrine

Likelihood of War

The domestic political difficulties which likely encouraged Khrushchev's temporary return to an alarmist view on the likelihood of an east-west conflict - after a period of relative optimism in 1955 and 1956 - reached a climax in June of 1957 when Khrushchev defeated the 'anti-Party group' within the Central Committee of the Communist Party. (1) With his leadership largely secure, the Party Chairman again altered his assessment of the prospects for peace, returning to the more optimistic judgement that Soviet strategic power would effectively restrain the west from attack. His public pronouncements also seemed to indicate that a nuclear war would prove a great disaster for all concerned, 'a future war' he warned in 1958, 'would cause immeasurable harm to all mankind'. (2) The revival of confidence in the 'deterrent' effect of Soviet strength and the emerging argument that nuclear weapons had robbed warfare of much of its utility or rationality were only two of several modifications in policy and declaratory strategic doctrine which Khrushchev initiated in his first few years of unchallenged leadership.

Perhaps the most radical of these reforms during the years 1957 to 1960 was the gradual displacement of ground armies by nuclear armed missiles as the dominant factor in Soviet doctrine. This revolutionary

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(1) See above Section II Chapter 2

(2) H.S. Dinerstein, War and the Soviet Union. New York: F.A. Praeger, 1962, pp. 96, 163; Thomas W. Wolfe, Soviet Power and Europe 1945-1970. Baltimore : Hopkins Press, 1970, pp. 156-159; Roman Kolkowicz, 'Strategic parity and Beyond', World Politics, April 1971, p. 433.

shift, modestly begun in the early post-Stalin period, rapidly accelerated in the latter half of the decade, eventually producing an intense controversy in the early 1960s over the significance of missile-nuclear forces. However, for the time being - roughly 1957 to 1960 - Khrushchev was allowed to set about the modification of Soviet strategic doctrine without serious opposition. (3)

Strategic Missiles

Soon after the death of Stalin, the Soviet assessment of the significance of strategic missiles acquired a steadily more generous quality, eventually reaching a high-point in 1960. Soviet military commentators in the later 1950s commended the ICBM for its speed, accuracy, devastating payload, all but invincible offensive capability and tremendous range - for the first time threatening the United States with direct attack. In the words of Marshal of Aviation K.A. Vershinin: 'Inter-continental ballistic missiles can deliver the most terrible weapon, the hydrogen bomb, instantly to the remotest regions of any continent on earth'. (4) In 1958, Major General N. Talenskii abandoned the customary Soviet prohibition against assigning decisive capabilities to any single weapon, describing the ICBMs as the 'decisive weapon of our time'. He went on to explain:

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(3) For a discussion of the so-called 'modernist-traditionalist' debate, see below Section III Chapter 2

(4) Dinerstein, op. cit., p. 226.

> The military significance of having solved the problem of creating a powerful super long-range, ballistic missile, capable of entering cosmic space and hitting any designated point, is exceptionally great. It is not only a quantitative increase in the potentialities of military strategy; it is a qualitative leap which fundamentally changes the methods and forms of the armed conflict. The inter-continental ballistic missile changes military strategy and its potentialities to an immeasurably greater degree and much more rapidly than, for example, the appearance of firearms or of aircraft in the past. (5)

Khrushchev's assessment

In the autumn of 1957, following the October 4 launch of Sputnik I, Premier Khrushchev became the nation's chief spokesman on the Soviet Union's long-range missile forces, assessing both their military and political significance. Khrushchev's statements on ICBMs in the period 1957 to 1960 expressed increasing confidence in both the deterrent and war-waging capabilities of missile-nuclear power. In 1957 he publicly declared strategic bombers 'obsolete' in the missile age. (6) By 1960 Khrushchev's public assessment of the significance of the missile-nuclear combination reached such proportions as to mark a major revision of Soviet strategic doctrine. After generations in which the ground armies had been assigned the pre-eminent position in Russian thinking, Khrushchev told the Supreme Soviet: 'total firepower and means of delivery' in other words nuclear weapons and

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(5) Dinerstein, op. cit., pp. 227-228; also on the role of missiles in Soviet strategic doctrine during this period see, Robert L. Garthoff, Soviet Strategy in the Nuclear Age. London : Atlantic Books, 1958, pp. 221-235.

(6) Garthoff, op. cit., pp. 222-223.

intercontinental ballistic missiles, had become the critical factors in modern warfare. (7) A future war would develop as a relatively brief struggle in which an initial nuclear exchange, devasting the whole of an enemy's territory, would decide the conflict. Further, the possibility of a successful enemy surprise attack had been eliminated by the Soviet Union's great missile nuclear power: 'modern means of waging war do not give any country the advantage of surprise attack'. (8) Any such assault upon the USSR would be met with 'a due rebuff'. (9)

As a result of the Soviet Union's strategic capabilities, Khrushchev explained: 'never in the whole history of the Soviet state has the defence of our country been so reliably secured'. With such strength in Soviet hands: 'war is no longer completely inevitable' and the trend was 'toward reduction of tension in international relations'. (10) Further, the revolutionary capabilities of modern weapons, technology and the nature of modern war were said to have greatly reduced the

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(7) M.P. Gehlen, The Politics of Coexistence. Bloomington, Ind. : University of Indiana Press, 1967, p.73.

(8) Roman Kolkowicz, The Soviet Army and the Communist Party : Institutions in Conflict. Santa Monica, Cal : The Rand Corporations, R-446-PR, August 1966, p. 241.

(9) A. Horelick and M. Rush, Strategic Power and Soviet Foreign Policy. Chicago : University of Chicago Press, 1966, p. 67; On the Soviet assessment of surprise in the late 1950s, see Dinerstein, op. cit., pp. 167-212, 216-221; Garthoff, op. cit., pp. 82-83, 84 - 87

(10) Kolkowicz, The Soviet Army and the Communist Party, op. cit., p. 241.

significance of the established armed services: 'In our time the defence potential of the country is determined, not by the number of our soldiers under arms (and) the number of persons in naval uniform ... (but) by the total firepower and the means of delivery available ...' (11) As a consequence the Premier announced a reduction in total military manpower from 3,623,000 to 2,423,000. (12) These reductions would make available additional funds: 'for the fulfilment and overfulfilment of our economic plans'. (13) In short, Khrushchev's January 1960 speech before Soviet legislature shifted the basis of Soviet strategic doctrine from its long established stress on massive ground armies to a primary reliance upon the ICBM and the nuclear warhead. It further delivered a strong vote of confidence to the concept of nuclear deterrence.

Strategic Aviation

In 1955 there appeared to be a Soviet re-evaluation of the long-range bomber which significantly enhanced its doctrinal status. (14) Articles appeared in the press discussing the importance of aerial refueling and described strategic aircraft as the basic delivery vehicle for nuclear weapons. They were said to be the most reliable means for destroying targets of both a tactical and strategic nature. By 1957 strategic aviation was charged, along with long-range missiles, with

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(11) Kolkowicz, The Soviet Army and the Communist Party, op. cit., p. 242

(12) Ibid., p. 241.

(13) Ibid., p. 242.

(14) Dinerstein, op. cit., p. 216.

striking the decisive first blow in a future war. (15)

However, the launch of Sputnik in August began an apparent decline in the doctrinal fortunes of strategic aviation. In 1957 Premier Khrushchev told James Reston of the New York Times: 'A revolution of a certain kind is taking place at the present time. Military specialists believe that both bomber aircraft and fighters are in the twilight of their existence. The speed and ceiling of bombers is such that modern missiles can destroy them'. (16) In his 1960 Supreme Soviet speech Khrushchev also explained that air power had lost its 'previous importance in view of modern developments of military equipment'. (17)

Nevertheless, Mr Khrushchev's judgement on the manned bomber was seemingly qualified by other less pessimistic statements issued by the party chief in the late 1950s, (18) as well as by the views of professional air officers who argued: 'The results already achieved in the development of aircraft and in the means of destruction employed by them and also the ceaseless qualitative improvement of aircraft equipment, give a basis for supposing that aircraft will play a very important role in future war'. (19)

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(15) Dinerstein, op. cit., pp. 230-232.

(16) Ibid., p. 233.

(17) Kolkowicz, The Soviet Army and the Communist Party, op. cit., p. 242.

(18) Dinerstein, op. cit., p. 234.

(19) Dinerstein, op. cit., p. 235; also see Garthoff, op. cit., pp. 179-188.

Strategic Defence

Even before the Russians had come to a full public awareness of the importance of air-nuclear power, air defence was recognised as an important strategic mission. With the growth of that awareness and the development of effective fighter aircraft and surface-to-air missiles in 1955, the significance of air defence was seen to increase. In that year, the press warned that not a single attacking aircraft would be allowed to reach its target. (20) It was admitted that: 'the slightest mistake of an anti-aircraft unit in conditions of atomic warfare can lead to very serious consequences'. (21) As a result, the air defence forces were acknowledged in 1955-1956 as one of the most important aspects of air power and reorganised as an independent armed service. (22) The military press published a number of articles reiterating the need for a fully effective active defence against air attack, a call which continued into the later 1950s. In 1957 Marshal Zhukov advised that the enemy's nuclear weapons and delivery systems: 'requires our armed forces, especially ... the air forces, to be always in readiness to frustrate any aggressor's attempt to accomplish a surprise attack on our country'. (23) Readiness was to be assured by a radar warning system, supersonic fighter aircraft, anti-aircraft artillery and surface-to-air missiles. (24) Mr Khrushchev's occasional forecasts of aircraft obsolescence during the later 1950s

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(20) Dinerstein, op. cit., pp. 238-239.

(21) Ibid., p. 241.

(22) Gehlen, op. cit., p. 71: On the organisational changes in air defence, see Section II Chapter 2

(23) Dinerstein, op. cit., p. 242.

(24) Ibid., pp. 242-243.

predicted their replacement by anti-aircraft missiles.

As for the problem of defence against missile attack, Soviet statements during the late 1950s generally lauded the invincible capabilities of the ICBM and did not anticipate the development of an anti-missile weapon in the near future. Nevertheless, there was public speculation on possible solutions to the missile defence problem as well as the judgement from Major General G.I. Pokrovsky that: 'in principle an anti-missile missile campaign and defence are possible ... ' (25)

Ground Forces

In the burst of Khrushchev's optimism about the capabilities of missile-nuclear forces, a ruinous decline in the strategic role, as well as the size of the ground forces may have appeared imminent. Mr Khrushchev, in fact, reduced the level of military manpower, a measure justified by developments in weapons technology and publicly devalued the doctrinal status and strategic mission of the ground forces. However, despite Khrushchev's public views, the Army was clearly not written off by Soviet strategists in the late 1950s. The much heralded power of nuclear weapons in the last half of the decade did not eliminate the professional military view that the initial strategic nuclear exchange might well prove indecisive, preserving a critical role for ground troops in western Europe. (26)

Far from condemning ground armies to obsolescence, Colonel I.S. Baz argued in 1958 thst the introduction of nuclear weapons to land warfare required larger active and reserve ground forces. (27) These forces

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(25) Albert Parry, Russian Rockets and Missiles. London : Macmillan, 1960 pp. 151-152; Garthoff, op. cit., pp. 228-231.

(26) Dinerstein, op. cit., pp. 252-253.

would, of course, have to be trained and equipped to deal with the special problem of the nuclear battlefield. They would, for example, have to avoid large troop concentrations of the World War II type in order to diminish their vulnerability to nuclear attack. Mobility was now of great importance, requiring the Army to be more fully motorised and mechanised, along with increased airlift capability and firepower. A high degree of Army mobility, added to its advantage in manpower over western armies, promised to preserve an extremely important role for conventional forces in the nuclear age. (28)

The Navy

The development of the missile and the nuclear warhead raised the Soviet Navy, with its missile capability, to a newly heightened status, improving the position of submarine forces, while reducing the role of conventional surface units. Admiral N. Pavlovick, writing in 1957, explained that the nuclear armed missile had provided the Navy with new strategic significance. With improvements in the range, accuracy and blast affect of submarine launched missiles and the development of an underwater launch capability it would be possible to destroy urban-industrial targets from submarines submerged off enemy coasts. (29)

Convinced of the growing significance of subsurface warships, the Soviet view of large surface fleets in these years remained much less admiring. The Russians argued that nuclear weapons, with their tremendous destructive capability, made it impossible for an enemy to concentrate task forces, as such concentrations were virtually

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(28) Dinerstein, op. cit., pp. 253-255; Garthoff, op. cit., pp. 149-166.

(29) Dinerstein, op. cit., p. 237.

indefensible against nuclear attack. (30) This development was seen as a serious blow to American basically surface oriented strategy and its trans-Atlantic support and supply missions. It was further asserted that nuclear weapons had also made any American troop landings on Soviet territory extremely difficult, landings which many Soviet commanders continued to regard as essential to any western victory. (31) Touching upon the role of the modern Soviet Navy in his famous 1960 speech to the Supreme Soviet, Mr Khrushchev said: 'the submarine fleet assumes great importance while surface ships can no longer play the part they once did'. (32)

Tactical Aviation

Despite Mr Khrushchev's rather erratic public judgements on the utility of manned aircraft, during the late 1950s, as in the early and middle years of the decade, tactical air power was said to command a valuable role in supporting ground army operations. Indeed, the tactical air forces retained particularly important missions on the nuclear battlefield, contributing to the now much needed requirement for increased theatre forces mobility through its transport units and providing an additional means for the delivery of tactical nuclear weapons on enemy airfields, troop and supply concentrations, bridges and command and control centres. (33)

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(30) Dinerstein, op. cit., pp. 247-248.

(31) Ibid., pp. 248-250.

(32) Kolkowicz, The Soviet Army and The Communist Party, op. cit., p. 242; also on naval doctrine, see Garthoff, op. cit., pp. 196-216.

(33) Wolfe, op. cit., pp. 175-176; Garthoff, op. cit., p. 163, Asher Lee, The Soviet Air Force. London : Duckworth, 1961, p. 163.

Limited Warfare

The declaratory view of limited war established in the early and mid-1950s remained largely unchanged in the closing years of the decade. (34) The possibility of a limited or purely conventional war in Europe was only hinted at in the late 1950s, with no indication of real change in the Soviet view appearing until the early 1960s. The entirely negative assessment of the feasibility of limited nuclear war was to remain intact throughout the Khrushchev period. (35)

Military Policy

Strategic Nuclear Forces

Khrushchev and the ICBM

During the last of the 1950s Party Chairman Khrushchev issued a number of public statements reporting the state of the Soviet ICBM capability and interpreting its significance for the Soviet-American strategic relationship. From August of 1957 to October of 1958 Khrushchev offered the USSRs development of the ICBM in refutation of any assertions of U.S. strategic superiority, warning that American invulnerability to attack had ended. (36) In November of the same year Mr Khrushchev - now Premier as well as Party Chairman - announced that the Soviet Union had entered ICBM production, going on to claim an ICBM 'assembly line' in the following year. (37)

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(34) Also on the status of limited war in Soviet doctrine, see above Section II Chapter 2

(35) Wolfe, op. cit., pp. 208-212; Garthoff, op. cit., pp. 97-115.

(36) Horelick and Rush, op. cit., p. 48.

(37) Horelick and Rush, op. cit., p. 50.

The Soviet Union's allegedly established status as America's strategic nuclear peer was employed by the Premier in the Twenty-First Communist Party Conference, in January of 1959, to support the judgement that any possibility of a capitalist restoration had been eliminated, permitting Khrushchev increased public confidence in the likelihood of a peaceful future. Although no specific claims of an operational ICBM capability were yet heard from the Soviet Union, the undeniable reality of Russian capabilities, as expressed in Khrushchev's ICBM production claims, was said to caution the west against adventurism. (38) In November of 1959 Premier Khrushchev's ICBM statements escalated to include the assertion of an operational long-range missile capability. (39) Early in 1960 he publicly established the intercontinental missile as the key factor in Soviet planning. In the same year he also created an independent strategic missile service and announced that the USSR commanded an ICBM arsenal fully adequate to destroy the United States. (40)

While Khrushchev was never to retreat from his basic commitment to the deterrent and war-waging capabilities of missile-nuclear forces, 1960 marked something of a high point in his claims for Soviet missile strength. Following the U-2 over-flight incident of 1960 a gradual moderation of Khrushchev's missile claims can be detected, with only occasional reversions to the earlier more confident posture. After the destruction of the American U-2 reconnaissance aircraft, Khrushchev

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(38) Horelick and Rush, op. cit., pp. 53-54.

(39) Horelick and Rush, op. cit., p. 58.

(40) Ibid., p. 68.

tended to stress the readiness of the USSR's strategic missile forces rather than their size or capabilities. (41) Later in the year, the Russians re-asserted their alleged superiority over the United States in ICBMs but never returned to the highly optimistic views of 1959 or early 1960, (42) eventually retreating to no more than assertions of strategic parity with the United States. Mr Khrushchev continued to warn that the Soviet Union possessed thermonuclear warheads in quantity but did not discuss delivery systems in detail. Far from claiming superiority over the USA in missile-nuclear power, the Russians reverted to the now dated reminder that America was no longer invulnerable to attack. (43)

Missile development

During the second half of the 1950s the T-2 IRBM entered its production and deployment phases. (44) Experimental work also proceeded on another IRBM, the T-4, a two-stage liquid-fueled weapon of improved accuracy capable of delivering a nuclear warhead over a range of perhaps 1000 miles. (45) Reports of a T-4A appeared in the west, supposedly a boost-glide winged vehicle of either intermediate or intercontinental range. (46) The first Soviet ICBM tests in 1957 were part of a long

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(41) Horelick and Rush, op. cit., pp. 71-72.

(42) Ibid., p. 73.

(43) Ibid., p. 81.

(44) Asher Lee and Richard F. Stockwell, 'Soviet Missiles', in Asher Lee, ed., The Soviet Air and Rocket Forces. London: Weidenfeld & Nicholson, 1959, p. 154; Parry, op. cit., pp. 132-133; Lee, The Soviet Air Force, op. cit., pp. 139, 140.

(45) Parry, op. cit., pp. 133-134.

(46) Ibid., p. 42; Lee and Stockwell, op. cit., p. 156.

established programme of ICBM development which involved the T-3, T-3A and T-3B systems. The first of these was estimated to have two or three stages fueled by oxygen and kerosene over a 5000 mile range. The two-stage T-3A was thought to have a range of 6000 miles and was said to be fueled by hydrogen and oxygen. (47) Finally, the T-3B was also under development as a three stage weapon, with a range of 7,500 miles. (48)

Clearly underlining the new status of strategic missiles, in May of 1960 Premier Khrushchev established the strategic missile forces as an independent armed service - raketnye voiska strategicheskogo naznacheniia - or Rocket Troops of Strategic Designation. (49) However, the new doctrinal stature of long-range missiles and Khrushchev's assertions of massive missile strength contrasted very sharply with the operational ICBM force levels actually achieved in the late 1950s. Despite the doctrinal fanfare, and evidence of an intensive acceleration of missile development in 1955 or 1956, during the period 1957 to 1961 the Soviet Union deployed no more than a very few of its first generation until the early 1960s. (50) If any operational 'missile gap' between the United States and the Soviet Union ever existed it survived only from late 1959 into early 1960 and was of no great significance in terms of the overall balance or imbalance of power. (51) Some years later

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(47) Lee and Stockwell, op. cit., p. 155; Parry, op. cit., pp. 141,142,143; Lee, op. cit., pp. 139, 141.

(48) Parry, op. cit., p. 141.

(49) Wolfe, op. cit., p. 181 Fn. 84.

(50) Wolfe, op. cit., pp. 85 and Fn.55, 182-183; Lincoln P. Bloomfield, Walter C. Clemens, Jn, and Franklyn Griffiths, Khrushchev and the Arms Race. Cambridge, Mass : MIT Press, 1966, pp. 41-43.

(51) Bloomfield, op. cit., pp. 93-96.

Colonel Oleg Penkovsky claimed: 'many of our big missiles are still on the drawing-boards, in the prototype stage, or are still undergoing tests. There are altogether not more than a few dozen of these, instead of the "shower" of missiles with which Khrushchev has been threatening the west.' (52)

The only Soviet missile systems deployed in strength were those of medium and intermediate range - suitable for use against western Europe. MRBMs went into series production in the mid-1950s (53) and the T-2 IRBM was reported operational in the latter half of the decade. (54) Clearly Mr Khrushchev chose to make his major missile investment in weapons of less than intercontinental range, with the total Soviet MRBM-IRBM force reaching some 750 weapons by the end of the Khrushchev period. (55)

Submarines and submarine launched missiles

During the late 1950s Soviet naval policy continued its concentration on ocean-going submarines as an effective means of destroying enemy carriers, as well as delivering strategic nuclear strikes, with the former objective established in 1957-1958 as the top

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(52) Oleg Penkovsky, The Penkovsky Papers. London: Collins, 1965, p. 241.

(53) Wolfe, op. cit., p. 183; Bloomington, op. cit., pp. 93-96.

(54) Lee and Stockwell, op. cit., p. 154; Parry, op. cit., p. 133.

(55) Wolfe, op. cit., pp. 183-184; For a discussion of the possible motives behind Khrushchev's missile deployment policy, see below pp.327-332.

short-term naval priority. (56) In his famous 1960 speech Khrushchev specifically noted that in the missile-nuclear age, while ground forces had declined in strategic significance, 'the submarine fleet assumes great importance'. (57) Its great importance was reflected in the programme for the development of improved ocean-going submarine types, both diesel and nuclear, as well as submarine launched ballistic missile systems - a programme spurred in 1959 by a decision to close the considerable qualitative gap between Soviet and American submarines. (58) Of the several classes of missile-firing submarine under development in the 1950s, three began to join the fleet in this period. (59) The diesel-powered G-Class first appeared in 1958 armed with the SS-N-4 ballistic missile. H-Class nuclear powered submarines, originally equipped with SS-N-4 and later SS-N-5 missiles, also first appeared in the same year. In 1960 the E-1 Class debuted, mounting the SS-N-3 cruise missile system. (60) As well as further pursuing the programme of submarine development, work also continued on the development of both cruise and ballistic missiles for submarine launch. Of the various systems under development only the SS-N-4 ballistic missile - first appearing in 1958 - was ready for fleet service in this period. (61)

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(56) Michael MccGwire, 'Turning Points in Soviet Naval Policy', in Michael MccGwire, ed., Soviet Naval Developments: Capability and Context. Halifax, N.S.: Dalhousie University Centre for Foreign Policy Studies, p. 175.

(57) Kolkowicz, The Soviet Army and the Communist Party, op. cit., p. 242.

(58) Donald W. Mitchell, A History of Russian and Soviet Sea Power. New York: Macmillan, 1974, pp. 492-493.

(59) On the types of submarine under development see above, Section II Chapter 2

(60) Michael MccGwire, 'The Structure of the Soviet Navy' in MccGwire, ed., op. cit., pp. 133-134.

(61) MccGwire, 'The Structure of the Soviet Navy' in MacGwire, ed., op. cit., p. 141; Also on the development of Soviet submarine

Strategic aviation

The very considerable disparity between Soviet doctrine and operational missile strength was also accompanied by something of a divergence between at least some of Premier Khrushchev's public pronouncements on strategic aviation and the course of policy affecting the nation's Long-Range Air Force. Khrushchev's predictions that manned aircraft generally would soon disappear might have been taken to imply an intention to reduce the number of Soviet bombers dramatically. Instead, during the late 1950s, the Russians adhered to the policy apparently adopted a few years earlier, namely the retention of an intercontinental bombing capability against the United States, while emphasising the development of forces designed to strike against western Europe and American overseas bases. (62) Far from consigning bombers to 'museums' as Khrushchev once declared, (63) the Soviet heavy bomber force of Bear and Bison aircraft reached a total of some 150-200 planes by the end of the 1950s, while approximately 1000 Badger medium jet bombers were added to the Air Force as a replacement for the TU-4 piston aircraft. A third heavy bomber type, the delta-wing Bounder was also under development in the late 1950s, although it did not enter production.

The additions to the nation's airpower brought the Soviet Long-Range Air Force to something near equality with SAC in numerical terms, the Russian strategic Air Force commanding some 1500 aircraft by 1960 as opposed to SAC's 1800 planes. The rough quantitative parity did not, however, imply equality in strategic capabilities, as

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(62) Wolfe, op. cit., pp. 178-179.

(63) Ibid., p. 180 Fn. 79; Lee op. cit., p. 138.

SAC heavily outnumbered the Russian force in bombers of intercontinental range.(64) Finally, beyond increasing aircraft numbers, the Soviet Union also expanded its basing facilities.(65) In short, although Mr Khrushchev obviously did not attempt to challenge American strategic superiority in the air or to duplicate SAC, he maintained and improved his own air options. Indeed, by 1960 so far as the Russians actually commanded a nuclear strike capability against the United States that capability largely rested with the long-range Air Force. In any case, it was clear that despite the talk of 'museums', the strategic Air Force was not being prepared for a glass case.(66)

Strategic defence

During the later years of the 1950s certain of Mr Khrushchev's public prophecies of aircraft obsolescence applied not only to long-range bombers but to other aircraft types as well, with aircraft generally expected to yield their missions to missiles of several varieties. However, during the final years of the decade air defence retained a very important role in Soviet declaratory doctrine, as efforts to improve its operational effectiveness were continued. Improvements included the development and delivery of new aircraft to the nation's air defence forces (PVO). Among these were the MiG-21,

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(64) Wolfe, op. cit., pp. 178-181 and Fn. 77.

(65) Lee, op. cit., pp. 137-139.

(66) Also on the Soviet Air Force, see Robert A. Kilmarx, A History of Soviet Air Power. London : Faber and Faber, 1962.

SU-7 and SU-9 fighters.[67] In the late 1950s the total PVO aircraft inventory was estimated at something like 4,000 aircraft.[68] Beyond the modernisation of the PVO's fighter inventory - a programme underway since the early post-Stalin period - during the late 1950s the Russians began the deployment of a system of anti-aircraft missiles. In the mid-1950s a system of first generation air defence missiles - SAM-1 - was deployed around Moscow. Later in the decade the improved SAM-2 appeared for general deployment.[69] As for the problem of missile defence, research was continued into this very difficult technical problem. However, no ABM deployment was begun, nor were any confident assertions of a missile defence capability made until the early 1960s.[70]

General Purpose Forces

Ground Forces

The late 1950s witnessed a dramatically favourable reassessment of strategic nuclear forces which ended with Premier Khrushchev's public declaration in 1960 that missile-nuclear forces had become the decisive element in modern warfare, displacing ground armies from their traditional position of primacy in Soviet doctrine. However, although the years preceding this judgement recorded the steadily increasing status of

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(67) William Green, 'The Development of Jet Fighters and Fighter Bombers' in Lee, ed., op. cit., pp. 142-145; Lee, op. cit., pp. 122, 159, 168; Wolfe, op. cit., p. 185.

(68) Garthoff, op. cit., p. 57; Lee, op. cit., p. 122.

(69) Asher Lee, 'Strategic Defence' in Lee, ed., op. cit., p. 128; Wolfe, op. cit., p. 185.

(70) Lee, op. cit., pp. 124-125; Wolfe, op. cit., pp. 186-187.

ICBMs and a reduction in the manpower levels of general purpose forces, during the period 1957 to 1960 ground armies preserved an important place in Soviet doctrine and policy. The first troop cut in 1955-1957 was followed by a second in 1958-1959.(71) It reportedly involved some 300,000 men, reducing the overall military manpower level to 3.6 million by January of 1960. The precise affect of this reduction on the ground forces is difficult to determine as detailed figures were never given, but the reduction appears to have been aimed at achieving a total Army strength of approximately 140 divisions.(72)

In contrast to any appearance of declining Army capabilities the late 1950s brought a continuation of the programme of Army modernisation. This programme was primarily designed to prepare the Soviet Army for the conduct of operations on a nuclear battlefield and consequently brought a move from the tradition of massive troop concentrations to an emphasis on troop dispersal and mobility, as well as reconnaissance and rapid offensive operations and increased firepower.(73) Additional firepower was provided by the progressive 'nuclearisation' of the Army through the assignment of tactical nuclear weapons to ground forces down to divisional level. Tactical nuclear weapons were reported in Army hands in the form of a mortar-howitzer firing nuclear shells as early as the middle of the 1950s. Tactical atomic warheads

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(71) See above, Section II Chapter 2 pp.

(72) Bloomfield, op. cit., pp. 98-99; Malcolm Mackintosh, Juggernaut. London: Secker and Warburg, 1967, p. 297; Wolfe, op. cit., pp. 165-166.

(73) Garthoff, op. cit., pp. 156-165; Wolfe, op. cit., p. 173.

were undergoing tests by 1956. (74) Later in the decade these weapons were to be delivered by rockets and tactical missiles - such as the Frog, Scud and Shaddock systems - fixed atop tank chassis or other tracked vehicles and capable of ranges of from 10 to 300 miles. Tactical aircraft were also to deliver tactical nuclear weapons in support of Army operations. In addition to nuclear firepower an effort was also made to improve the effectiveness of conventional artillery. Finally, the need for greater mobility was answered by the continuing motorisation of the ground forces increasing the ratio of tanks and armoured personnel carriers to troops. (75)

Tactical airpower

As with other elements of Soviet air power during the late 1950s, Mr Khrushchev's occasional disparagements of manned aircraft were not reflected in the policy affecting the nation's tactical air forces. The trends established in the middle years of the decade were continued, bringing improved fighter aircraft to the tactical ranks including the MiG-21. The transport section received new fixed wing transports - the Antonov twin-and four-engined turbo-prop aircraft as well as the Yak-24 and MiL-6 helicopter transports. Tactical bomber units were strengthened by the Ilyushin-140 and a supersonic version of the Yak-25. The total tactical aircraft inventory continued to account for more than half of the nation's military aircraft, amounting to some 10,000 planes. (76)

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(74) Garthoff, op. cit., p. 157; Wolfe, op. cit., p. 142 Fn. 42.

(75) Wolfe, op. cit., pp. 173-175 and Fn. 52; Also on the Soviet Army, see Edgar O'Ballance, The Red Army. London : Faber and Faber, 1964; Michael Garder, The History of the Soviet Army. London: PallMall Press, 196

(76) Garthoff, op. cit., p. 57.

The Navy

The disparity between Soviet declaratory doctrine and defence policy affecting long-range missiles was not equalled in the case of naval doctrine and policy. Naval doctrine and policy in both the middle and late 1950s exhibited generally consistent trends. At the end of the decade the Russians held to the judgement that a 'balanced fleet' was undesirable, as conventionally armed surface ships remained critically vulnerable. The emphasis on destroyer-sized surface ships equipped with cruise missiles was therefore retained, along with a primary stress on the development of a large modern subsurface fleet of ocean-going diesel and nuclear submarines armed with torpedoes and cruise as well as ballistic missiles. Finally, the major strategic objectives of the Navy remained the destruction of western surface ships - particularly aircraft carriers and the development of a nuclear strike capability based upon the submarine fleet.(77)

In the final years of the 1950s the policy of modernisation affecting the surface fleet proceeded on the basis of a policy decision adopted in 1957-1958.(78) The fleet was to be modernised by the application of the latest weapons technology to the surface Navy producing a force of relatively light warships - including both modified older types as well as new classes - armed with surface-to-surface missiles. The Krupnyi and Kildin cruisers, with the latter derived from the Kotlin class destroyer, represented the Khrushchev trend in surface ship policy.(79) Although any suggestion of

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(77) Wolfe, op. cit., pp.188-190.

(78) Michael MccGwire, 'Current Soviet Warship Construction', in MccGwire, ed., op. cit., pp.121-122; and by the same author, 'The Structure of the Soviet Navy' in Ibid., pp.136-138, 140.

(79) Ibid.

producing strike aircraft carriers was permanently ruled out, the effort to improve the effectiveness of naval aviation was also continued. The Naval Air Force, while considerably reduced in size, benefited from the introduction of new aircraft - including the MiG-21 fighter, the TU-16 Badger and TU-95 Bear bombers - and generally increased its offensive and reconnaissance capabilities. (80) Further, it was also decided to develop the Moskva Class anti-submarine cruiser, designed to employ helicopters in an anti-submarine role over the Barents Sea. (81)

The major concern of naval policy consistently remained the development of submarine strength, with Khrushchev constructing a submarine force reduced inits numbers but much increased in its capabilities. (82) Conventionally powered and conventionally armed additions to the subsurface fleet in the late 1950s included the R-Class, a second post-war generation medium-type submarine, diesel powered, torpedo armed and assigned to anti-surface fleet-area defence. The F-Class, a second post-war generation large-type, diesel powered and torpedo armed, also joined the fleet in this period. In 1958 the ranks of non-missile firing submarines were expanded by the torpedo-armed, nuclear-powered N-Class submarine serving in an anti-carrier role. (83)

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(80) Lee, op. cit., pp. 151-155; Wolfe, op. cit., pp. 191-192; Mitchell, op. cit., pp. 496-498.

(81) MccGwire, 'Current Soviet Warship Construction' in MccGwire, ed., op. cit., p. 121.

(82) Wolfe, op. cit., p. 189; Mitchell, op. cit., p. 493.

(83) MccGwire, 'The Structure of the Soviet Navy', in MccGwire, ed., op. cit., p. 135; On missile firing submarines, see above pp.318-319.

Warsaw Pact

Soviet policy with regard to the Warsaw Pact in the late 1950s remained unchanged from the attitudes adopted at its foundation. Not until the early 1960s was the Pact to emerge as much more than a political response to West Germany's NATO membership.(84)

The Role of Action-Reaction : 1957-1960

Evidence of Reaction:

Land-Based Missiles

By the later 1950s the United States had amassed a tremendous strategic nuclear capability in support of its 'New Look' retaliation policy. It was therefore clearly essential that the Soviet Union urgently deploy a major intercontinental strike force. Khrushchev's approval of a rapid acceleration of ICBM development in the middle and late 1950s represented the Soviet bid for something like strategic equality with the United States and as such was fundamentally responsive to the build-up in American air-nuclear strength. While the drive to acquire an operational ICBM force can fairly be considered a reaction to US policy and deployments, Khrushchev's decision to award long-range missiles a position of towering primacy within Soviet doctrine was not the necessary or inevitable result of American actions, but was instead born of the Soviet assessment of the strategic significance of the ballistic Missile.

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(84) Garthoff, op. cit., pp.149-152; Roman Kolkowicz, 'The Warsaw Pact: Entangling Alliance', Survey, Spring 1969, pp.86-101; Wolfe, op. cit., pp.148-149; Also see above Section II Chapter 4.

The ICBM was thought to have greatly reduced the role of the long-range bomber - still much revered in the United States as part of the American 'triad' of delivery systems, and also to have diminished the value of all other armed forces. The position of ICBMs in Soviet doctrine was also advanced by the desire for a relatively economical solution to the nation's security problems and the obvious wisdom of exploiting the only area of weapons technology in which the USSR enjoyed a dramatic lead over the United States.

The decision to restrict the number of operational ICBMs to a mere handful of weapons, despite their lofty doctrinal status, was the product of both responsive elements and domestic factors in Soviet policy-making. Among the responsive elements determining the size of Soviet missile forces was the apparent judgement that war with the United States was unlikely. After a number of Cold War crises which had failed to trigger an American attack, even in the early post-war years of very marked Soviet strategic inferiority, Mr Khrushchev and his Party colleagues were evidently persuaded that an entirely unprovoked U.S. attack was most improbable. (85) However, this assessment of the likelihood of war was significantly strengthened by the prevailing Soviet view of nuclear power as an effective deterrent, whatever the nature of U.S. intentions. In such circumstances, Premier Khrushchev may reasonably have argued that little more than a low level ICBM capability was strictly necessary, regardless of what might have been ideally desirable. If the USSR was chiefly to rely upon her long-range missiles for political and prestige value then there was perhaps no need to undertake a heavy deployment or certainly

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(85) Wolfe, op. cit., pp. 88-89, 156-159.

to await its completion before beginning the harvest of propaganda and diplomatic advantages already produced by the first dramatic missile tests in 1957.

Among those essentially 'non-responsive' factors influencing Khrushchev's minimal missile deployment may have been the quality of the Soviet Union's first generation ICBMs. With weapons which were perhaps insufficiently reliable and which could only be deployed in the most vulnerable above ground mode, it may well have appeared prudent to await the full development of an improved second generation system before constructing a major operational force. (86)

Regardless of the quality of the Soviet Union's early ICBMs, the idea of a heavy deployment was surely not advanced by yet another domestic factor - the enormous resources which such a deployment would have required. The expenditure - unwelcome at any time under leadership interested in expanding the civilian sector of the economy - was perhaps particularly unattractive after 1958 when a decline in the USSR's industrial growth rate had already increased the burden of defence expenditure even without any rapid acceleration of ICBM deployment and when the expense already incurred in ICBM development and IRBM deployment was rapidly devouring - perhaps entirely exceeding - the savings earned in reducing general purpose forces. The economic constraints influencing the Soviet leadership may have persuaded Mr Khrushchev that there was nothing to be gained in entering a missile contest with an adversary enjoying far greater resources and industrial capacity. (87)

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(86) Wolfe, op. cit., p. 182.

(87) Dinerstein, op. cit., p. xvii; Bloomfield, op. cit., pp. 106-110, 177-178; Roman Kolkowicz, The Dilemma of Superpower : Soviet Policy and Strategy in Transition. Arlington, Va: Institute for Defence Analyses, Research Paper P-383, October 1967, pp. 7-9.

In addition to the competing demands of the civilian economy, ICBM deployment also had to compete with the expenditure requirements of I/MRBM deployments, Army and Navy modernisation, strategic aviation and air defence. The failure to invest heavily in a system of intercontinental range may also have been influenced by the still surviving Soviet concentration on the European theatre where the USSR's adversaries maintained forces directly threatening Russian territory. (88)

The very different course of Soviet policy affecting M/IRBMs - producing a large number of operational medium and intermediate range missiles - was also the result of a mix of internal and external influences. The origins of the M/IRBM programme were clearly internal and did not represent a direct response to the United States. Their development began immediately after World War II and proceeded rapidly to operational status. The high level of medium-range missile force levels as compared to the number of intercontinental weapons in part reflected the still potent influence of the European theatre on Soviet thinking, despite the emergence of the United States as a dangerous adversary. Finally, the Russians were also encouraged to invest heavily in M/IRBMs by serious problems of ICBM reliability and performance which were to remain a contributing factor in the USSR's minimal ICBM deployments until the 1960s. (89)

However, while the origins of the Soviet M/IRBM capability and subsequent deployment decisions were significantly affected by factors not directly related to the United States, their deployment in large numbers under Khrushchev found important additional purpose in several

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(88) Dinerstein, op. cit., pp. xv-xvi.

(89) Wolfe, op. cit., pp. 181-182.

US, as well as broadly western actions. The growing, and for the time being likely unchallengeable margin of US strategic nuclear superiority, further extended the utility of the old 'hostage Europe' policy. A large M/IRBM force threatening America's western allies further assured their position as hostages to Soviet attack. Other US or western actions encouraging a heavy deployment of medium and intermediate range missiles included the maintenance of American military bases ringing Soviet territory, the introduction of US tactical nuclear weapons into NATO's arsenals - a move specifically designed to reduce the USSR's manpower advantages and the gradual strengthening of NATO made particularly disturbing by West Germany's admission to the alliance.

A counterbalancing Soviet increase in conventional strength would have eliminated any possibility of economy in defence spending and drained badly needed resources from the programme of strategic weapons development. Attempting to throw a large ICBM deployment into the overall balance would have required far greater expenditures and may have involved technical problems which did not prohibit a major deployment of the less sophisticated MRBM and IRBM systems. Further, a large force of M/IRBMs reinforced the USSR's still high proprity European defences at what would hopefully prove an economical price, while also increasing Soviet political leverage in western Europe and offering a ready response to any future national nuclear developments in the NATO area.(90)

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(90) Wolfe, op. cit., pp.140-144, 154-155, 180 Fn.78.

In conclusion, the course and character of the Soviet missile programme during the 1950s represented a blend of Mr. Khrushchev's personal strategic judgements, domestic and internal objectives and priorities, as well as the economic and technological constraints affecting defence policy, with the result that the emerging Soviet missile forces completely failed to conform to American expectations.

Strategic Defence

Perhaps one of the most unqualifiedly direct Soviet reaction in this period occurred in air defence policy. Despite Khrushchev's occasional criticisms of manned aircraft, born perhaps of an over-enthusiastic appreciation of anti-aircraft missiles, the American stress on long-range bombers and the consistent improvements in US air power, stimulated the organisation of the nation's air defences as an independent armed service and maintained the significance of the PVO thereafter, as the on-going effort to strengthen Soviet air defences by the production of advanced fighter aircraft and the introduction of surface-to-air missiles was continued. It is probable that the acceleration of the American ballistic missile development also lent increased significance to the USSR's programme of anti-missile research, an effort which the Russians apparently initiated long before the United States became deeply concerned with the ballistic missile as a delivery system.

The Navy

Soviet naval doctrine and policy in this period, as in the mid-1950s, revealed considerable responsiveness to American actions. However, the reactions stimulated by U.S. policy remained of a distinctly Soviet kind, little resembling the form of American naval strategy. Many of the measures adopted were clearly influenced by the growing threat posed by American aircraft carriers. Seven new U.S. carriers were laid down by 1958 and three others modernised, as aircraft with ranges capable of penetrating into industrial Russia joined the fleet. The United States also continued its development of nuclear submarines and submarine launched ballistic missiles. (91)

In the face of the carrier threat the Russians held to the view that large surface ships had become fatally vulnerable. Their response to the American challenge was therefore to extend their own operational capability at sea, not through the construction of a 'balanced' navy of the American type but through destroyer-sized surface ships armed with surface-to-surface missiles and a large force of ocean-going submarines. While the decision against a great surface fleet was no doubt influenced by the limitations affecting Soviet resources, it at least in part represented an independent and 'un-American' judgement of the nature and requirements of modern naval warfare.

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(91) Wolfe, 'Soviet Interaction with the United States and its Influence on Soviet Naval Development' in McGwire, ed., op. cit., p. 221.

As well as significantly affecting the structure of the Soviet surface fleet, the advanced state of American nuclear submarine development - producing the nuclear powered Nautilus in 1954 - may well have spurred the development of a Soviet nuclear submarine and a later decision to close the general qualitative 'gap' between Soviet and American submarines. However, the United States cannot be credited with initiating the Soviet development of submarine launched missile systems. Russian R and D in this field began very soon after the Second World War as part of the early Soviet interest in missile research, although the Soviet SLBM effort may also have received additional impetus from the advanced state of the American SLBM effort at the end of the 1950s. The development of the USSR's missile submarine fleet - unlike its American equivalent - produced both cruise and ballistic missiles, with the former receiving further stimulus from U.S. carrier deployments. (92) Finally, the effort to improve naval aviation can also be regarded as another aspect of the general commitment to extended naval capabilities in response to the large ocean-going navies of the west.

The ground forces

In the first few years after Stalin's death the doctrinal position of the ground forces experienced something of a decline implicit in the concession of major, in some circumstances even decisive, capabilities to strategic nuclear systems. This early evidence of a changing

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(92) Wolfe, 'Soviet Naval Interaction with the United States and its Influence on Soviet Naval Development' in McGwire, ed., op. cit., pp. 222-226; Mitchell, op. cit., pp. 492-493.

strategic emphasis was reflected in defence spending, manpower levels and weapons research. During the closing years of the decade the implicit decline in the status of the ground forces continued, as did the newly established trends in spending, manpower and research. This gradual process reached a climax in 1960 when the ICBM was publicly established as the decisive factor in Soviet doctrine and the ground forces explicitly credited with a less than decisive role, as Mr Khrushchev appeared to be adopting a policy resembling the American 'New Look'.

It is reasonable to suggest that in so doing the USSR was essentially reacting to the United States which had some time before adopted a heavily nuclearised strategy at the expense of its conventional forces, encouraging a roughly similar realignment in Soviet doctrine and policy. In addition to the stimulating American example, in steadily moving towards a nuclear emphasis during the late 1950s, Khrushchev was also influenced by a number of factors not unlike those which accounted for the 'New Look' in the United States. These included the Premier's personal conviction that nuclear power had radically altered the nature of modern warfare, diminishing the utility of ground troops and thrusting strategic nuclear weapons into the decisive position. The move to reduce ground forces was also the consequence of Khrushchev's domestic economic problems and priorities. He was committed to an expansion of the civilian economy which demanded a firm grip on defence spending. At the same time the development of the new critical strategic nuclear forces required a heavy investment of national resources. If both the civilian sector and the USSR's nuclear capabilities were to be strengthened - particularly in a time of

declining industrial growth after 1958 - cuts in some area of expenditure were clearly advisable. In the 'nuclear age' conventional forces appeared a very appropriate area for savings, freeing both additional budgetary and manpower resources.

However, before accepting Khrushchev's intensifying stress on strategic nuclear systems as a painstaking emulation of America's 'New Look' it is important to recall that, despite the Premier's pronouncements on nuclear weapons, Soviet ground forces maintained high force levels and continued to undergo an extensive programme of modernisation. Khrushchev clearly did not dismantle or even significantly reduce his European ground forces, but, instead joined a missile-nuclear capability (M/IRBMs) to major conventional deployments in Europe. The maintenance of large ground forces was the product of both internal or 'non-responsive' factors, as well as the actions and policy of the United States.

Although nuclear weapons had been declared decisive in a future war, the USSR's geographical location had not changed. The geographical or geopolitical realities required provision for the defence of Soviet frontiers against still powerful neighbours who together preserved a deep Russian interest in the European theatre long pre-dating the emergence of the U.S.A. as the major Soviet adversary. The ground forces' cause was also supported by the politically influential Soviet Army itself which continued to advance the 'combined arms principle' and the firm belief that powerful ground forces remained essential for victory in a future war. The Soviet desire to represent the USSR's interests among Warsaw Pact members may also have provided further

encouragement for large-scale Army deployments in eastern Europe. Beyond eastern Europe, the Army was also useful in supporting Soviet political influence on the continent as a whole.

These factors alone would probably have proved more than enough to assure the survival of large ground forces. However, the maintenance of large numbers of ground troops and the character of the Army modernisation effort was very significantly affected by developments in the west, developments which also influenced other aspects of Soviet policy including M/IRBM deployments. The growing American strategic nuclear superiority and Khrushchev's awareness that even approximate nuclear parity would not be achieved for several years continued to breath life into the old 'hostage Europe' strategy, recommending a still highly visible Soviet ground threat to western Europe, bolstered by M/IRBMs, as a response to America's great nuclear advantage. U.S. military bases in Europe may also have provided some degree of justification for conventional forces.

The increasing capabilities of NATO strengthened by the distressing addition of West Germany to the Atlantic fold also continued to argue against any dramatic reduction in conventional force levels. The NATO shift to a tactical nuclear emphasis in the late 1950s further urged the support of large ground armies, especially the Soviet Union would be unable to equal the west's tactical nuclear capability for some years. The growing nuclearisation of NATO also stimulated, although it did not initiate, a number of changes in Soviet Army training, tactics and equipment in a continuation of the Stalinist programme of Army modernisation designed to increase armoured strength, mobility and firepower, with the latter

objective including the introduction of tactical nuclear weapons into the ground forces. (93)

Evidence of other factors influencing the development of Soviet doctrine and policy

Strategic aviation

The Soviet declaratory view of strategic aviation during the late 1950s generally marked a decline in the significance officially attributed to long-range bombers, reflecting a judgement at odds with the American 'strategic triad' doctrine. Khrushchev in particular went on public record with predictions of a limited future for manned delivery systems. Although there were obvious propaganda and international political advantages to be had from a devaluation of the weapons system which occupied the central place in U.S. strategy, the change in the doctrinal status of strategic aircraft must at least in part be credited to the Soviet conviction that the ballistic missile represented the strategic weapons systems of the future. The sincerity of this judgement was reflected during the second half of the 1950s in the evidence of a marked shift in budgetary and research resources away from the traditional services and weapons to the missile programme.

The clear movement in the direction of missiles did not, however, signal the demise of the Long-Range Air Force. Instead, the air doctrine and force structures of the early and middle 1950s remained largely intact.

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(93) Kolkowicz, The Soviet Army and the Communist Party, op. cit., pp. 243-244; Wolfe, Soviet Power and Europe, op. cit., pp. 140-148, 152-156.

Confounding the predictions of American analysts, the Russians accumulated no more than a relatively small force of long-range aircraft, while deploying a large number of medium-range bombers. The motivations behind the shape of Soviet air power were still those of a few years before. A heavy bomber force was deployed and bomber R and D continued, perhaps as a hedge against the development of insoluable technical problems in the ICBM field and as a stop-gap strategic capability in the period before the acquisition of an effective missile force. The strong emphasis on medium-range aircraft was based upon the judgement that the ICBM represented the most effective strategic delivery system, making the construction of a large bomber force unnecessary and wasteful. The high priority always attached to the European theatre, now reinforced by NATO's substantial nuclear as well as conventional forces, also explains the large deployment of medium-range bombers. (94)

Tactical aviation

Tactical aviation suffered a decline in its status which was implied in the forecasts of aircraft obsolescence issued by Mr Khrushchev and other commentators. This implicit devaluation of tactical airpower was the result of Khrushchev's assessment of the revolutionary implications of missile for modern warfare at all levels of conflict. However, during the late 1950s the improvement of tactical aviation begun in the early post-war period was further advanced. Tactical air strength continued to benefit from the delivery of new aircraft and maintained a total force of some 10,000 planes.

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(94) Wolfe, Soviet Power and Europe, pp. 178-180.

The tactical air aspect of conventional theatre forces policy was probably motivated by the same factors which inspired the maintenance of large conventional ground armies. Among these, the need to develop the capability to conduct ground operations on a European nuclear battlefield - made particularly essential by the nuclear shift in NATO strategy - provided Soviet tactical aviation with a role in the delivery of tactical nuclear weapons.(95)

Conclusion

During the 1950s, as earlier in the decade, Soviet responsiveness to American actions was substantial. The continuing development of massive American nuclear forces all but compelled the Russians to acquire a similar capability, resulting in a general decline in the role of the ground forces and a dramatic increase in the status of those forces designed either to launch or resist a nuclear attack. Nevertheless, as in the early and middle 1950s, the character of Soviet reactions retained a strongly indigenous quality, determined by independent strategic judgements and preferences, economic and technological constraints, geopolitical realities and other factors.

The on-going effort to develop a major strategic nuclear capability at the expense of the nation's conventional forces, while certainly encouraged by the policy of the United States, produced subsequent readjustments in Soviet doctrine affecting manned aircraft - strategic and tactical - as well as tactical and strategic missiles which were not inevitably fated by the character of American policy. Indeed, these readjustments conflicted with the principles of the 'New Look' and were chiefly the product of independent

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(95) Lee, op. cit., p.166; Wolfe, Soviet Power and Europe, op. cit., pp.169, 205-207.

Soviet judgements and domestic circumstances. Similarly, the Navy held to an 'un-American' stress on ocean-going submarines and light surface ships, as the Army retained high force levels and was extensively modernised. In short, the USSR during this period continued to react to American actions in its own largely unemulative manner.

Khrushchev and Deterrence

Declaratory and Operational Concepts

After several years in which Soviet strategic doctrine remained 'frozen' in its wartime form and the concept of 'deterrence' found no expression beyond that vaguely implied in the 'hostage Europe' policy, the middle and late 1950s witnessed the emergence of nuclear deterrence in the USSR, leading to its public acceptance as the dominant feature in Soviet doctrine by 1960. In moving to a strong nuclear emphasis and in fully accepting the nuclear deterrence principle, Khrushchev accomplished a radical shift in Soviet declaratory doctrine, adopting a policy apparently bearing a close resemblance to the American deterrence concept evolved during the late 1940s and early 1950s. The belated Soviet move to deterrence might be seen as a consequence of the 'lag' between Soviet and American doctrines introduced by the Stalinist 'freeze' on strategic thought, perhaps providing an example of the 'educative' function of U.S. strategy. However, an examination of the nature and origins of Soviet deterrence does not entirely confirm the assertion of an intimate doctrinal relationship between the two countries in which the USSR is cast as America's faithful, if unimaginative student.

In declaratory terms Soviet deterrence, and if need be defence, essentially rested upon an obliterating missile-nuclear capability, threatening a massive blow, destroying and disarming any aggressor. In its declaratory form, therefore, Khrushchev's doctrine was not unlike the Eisenhower policy of 'massive retaliation'. However, despite the doctrinal bravado, Soviet deterrence in strategic nuclear terms was backed by only a relatively small force of intercontinental bombers, a demonstrated capability to produce long-range missiles and the most embryonic of ICBM forces reinforced by the power of the Premier's rhetorical deployments. In short, while attempting, with steadily diminishing success, to preserve a declaratory doctrine based upon a 'massive retaliation' capability, Khrushchev actually settled for a policy of 'minimum deterrence' implemented by nuclear forces much inferior to those of his great adversary. This inferior force was capable of supporting only a highly negative variety of deterrence, threatening a number of American cities but unable to wage nuclear war by effectively assaulting U.S. strategic forces and smashing the urban-industrial foundations of American society.

In adopting a 'minimum deterrence' or 'deterrence only' strategy, Khrushchev assumed a posture strikingly similar to that recommended by Gheorghi Malenkov before 1955 but clearly at odds with American doctrine throughout the Eisenhower Administration. Khrushchev's declaratory concentration on nuclear weapons and a 'massive retaliation' capability, as well as his genuine acceptance of nuclear deterrence, sounded themes already long familiar in Washington. However, Khrushchev's apparent belief that low level nuclear deployments could satisfy the requirements of effective deterrence had no place in American policy. Indeed, even after the adoption of 'sufficiency', the United States remained committed

to overall strategic superiority as a short-term objective and the maintenance of a nuclear war-waging capability, crushing the enemy's urban-industrial areas and destroying as much of his military establishment as possible, thereby providing both a positive expression of deterrence and an adequate defence should deterrence fail. Whatever the 'New NewLook' may have been, it was not 'minimum deterrence'.

The nuclear forces deployed by the Soviet Union and the United States differed not only in size but also in structure. American forces clearly reflected an emphasis on the ability to launch a direct attack upon the USSR from bases in the United States, requiring weapons systems capable of striking over an intercontinental range. In sharp contrast, both the USSR's bomber and missile forces were heavily weighted in the direction of medium range systems.

The divergence between Khrushchev's 'Newlook' and the Eisenhower deterrence policy also extended to the status of conventional forces. In the Soviet Union, as in the United States, declaratory doctrine argued that modern weapons technology had significantly reduced the need for large ground armies; and in fact in both countries these forces were reduced without being abolished. During the 1950s Washington and Moscow were persuaded that the new technology offered the answer to security - perhaps even superiority - with economy in defence spending, a hope which each discovered to be false within the same decade. However, in the Soviet case, only marginal reductions in the size of ground forces were actually accomplished, while the USSR maintained large conventional deployments in Europe and pursued a major programme of Army modernisation. The Soviet Army continued to account for a very large proportion of the USSR's total capability to wage war.

In short, despite an apparent similarity, the Soviet and American definitions of strategic effectiveness and credible deterrence remained significantly different. The American view demanded a tremendous - and for so long as possible, superior - intercontinental strike force designed essentially for deterrence positively expressed in a demonstrated capability to wage nuclear war successfully. Although the late 1950s brought a growing official awareness that deterrence and defence in a world of two nuclear powers also required provision for conflicts below the full-scale strategic level, the emphasis of Eisenhower doctrine and policy remained fixed upon intercontinental nuclear warfare. At the same time the Soviet leadership was apparently convinced that the cause of deterrence was effectively - if not ideally - served by a minimal nuclear force, a force unable to wage war or actually defend the Soviet Union but capable of launching some kind of punitive strike against America's largest cities. Strategic effectiveness and deterrence were also seen to require large conventional forces and a major nuclear capability at medium range.

Origins

It is not possible to determine with certainty the full range and precise balance of factors which moved Premier Khrushchev to shift Soviet declaratory doctrine from its ground forces tradition to a heavy stress on nuclear weapons and a firm attachment to the concept of nuclear deterrence. However, it is possible to suggest a number of external and internal influences upon Soviet policy - making which may explain the dramatic revision of the USSR's declaratory strategic doctrine in this period.

It can be argued that the acceptance of nuclear deterrence by the United States played a major pwer in its subsequent appearance in Soviet declaratory doctrine. Indeed, the example of the United States, already settled upon nuclear weapons and a strategy of nuclear deterrence, as the Soviet Union was in the process of revising its strategic doctrine, may well have spurred the Russians to adopt the deterrence concept. However, it is equally possible that the origins of Khrushchev's declaratory 'New Look' policy - like the origins of Malenkov's unsuccessful proposal of 'deterrence' in the mid-1950s - were similar to those domestic influences and independent judgements which had earlier brought the United States first to the 'discovery' of deterrence and then to the adoption of a policy of deterrence through massive nuclear power.(96)

In the Soviet case, as in the American, these judgements and influences probably included the sincere conviction that nuclear weapons had, indeed, revolutionised the nature of warfare, reducing the utility of conventional forces, a judgement which extensive experience with nuclear weapons testing and the development of strategic delivery systems alone might reasonably have suggested to any nuclear power. The experience of modern weapons development may also have inspired Khrushchev's confidence that nuclear power could provide the basis for an effective deterrent. The shift to nuclear weapons and deterrence was also encouraged in the USSR - as in the United States - by economic problems and priorities which strongly urged restraint in defence spending at a time when modern weapons technology briefly appeared to provide an excellent opportunity for reducing the cost of security. Technology further prompted the Russians to a missile-nuclear

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(96) On the Malenkov 'deterrance' proposal and the origins of Soviet deterrence, see Section II Chapter 2

policy by presenting the Soviet leadership with an unmatched technological capability promising major strategic and political advantages. These advantages were fully exploited in Khrushchev's public assessment of the ICBM and its consequences for the Soviet-American power balance. The Soviet decision to invest the deterrent mission primarily in the ICBM was clearly an independent Soviet judgement proceeding from a pioneering commitment to missile research and leading to a strategic force structure which the United States with its emerging 'triad' of delivery systems was never to accept.

Beyond the declaratory doctrine, the origins of Khrushchev's operational doctrine of 'minimum deterrence' were largely those already stated in explaining his meagre ICBM deployment - a blend of independent Soviet judgements and domestic factors with a consideration of American actions and capabilities. (97) Minimum deterrence was in part the product of the strategic nuclear convictions of Khrushchev and his colleagues, arguing that nuclear power had so changed the nature of modern warfare as to modify earlier conceptions of 'war-waging' and 'victory'. If, as the Soviet Premier apparently came to believe, the devastating destructiveness of nuclear power had greatly devalued any traditional concept of 'victory' then even a minimal nuclear force was adequate for purposes of deterring any rationally minded opponent, as well as assuring adequate international political leverage, making a vastly expensive deployment of strategic nuclear systems unnecessary.

Confidence in the effectiveness of minimum deterrence was also importantly strengthened by the view that an unprovoked American nuclear strike was unlikely, an opinion based upon Khrushchev's experience of

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(97) See above, pp. 327-332.

several Cold War crises, as well as his assessment of the significance of nuclear weapons for modern warfare. Domestic economic circumstances not only encouraged a general shift in the deterrence direction but also urged a policy of minimum deterrence. As Khrushchev struggled with the resource requirements of the civilian economy, strategic nuclear development and the conventional armed services, the prospect of an unrestricted ICBM competition in a period of declining Soviet industrial growth with an adversary commanding a far superior economic, technological and industrial capacity could not have appeared especially inviting. Any headlong dash for strategic equality with the United States would also have been inhibited by the USSRs still firm commitment to the European theatre where a costly I/MRBM deployment was underway.

However, even had Khrushchev decided to authorise a massive ICBM deployment, despite the cost, it is probable that he would have been all but prohibited from doing so by the technical limitations of Soviet missile technology. It is difficult to believe that the USSR would have been quite so severely sparing in its ICBM deployments had the quality of its first generation system warranted a major investment.

Finally, the retention of large general purpose forces in the Soviet definition of strategic effectiveness and credible deterrence stemmed from those factors noted above in explaining the motivation for maintaining powerful ground armies: (98) geopolitics, the traditional concentration in Europe and large ground forces, the professional judgements and political weight of the Soviet Army and the USSR's political interests in both eastern and western

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(98) See above, pp. 334-338.

Europe. Nevertheless, the character of Khrushchev's modernisation policy affecting the general purpose forces was also importantly influenced by such U.S. or broadly western actions as: America's massive nuclear superiority, the maintenance of U.S. bases abroad, the American commitment of tactical nuclear weapons to NATO and West Germany's signature of the North Atlantic Treaty.

In summary, the deterrence doctrine adopted by Khrushchev in its declaratory form bore an apparently close resemblance to that of the United States in its 'New Look' period, suggesting a close relationship between the Soviet and American strategic doctrines in which the United States had slowly managed to instruct the USSR in the ways of deterrence. In fact, the example of the United States, already drawn up in a deterrence posture by the mid-1950s, may well have influenced the USSR to assume a similar position. Precisely how influential the American example may have been is impossible to say with certainty, but, regardless of its affect, it is entirely possible that the USSR was brought to accept the nuclear deterrence principle both by the American strategic example as well as by the same technological and economic factors which earlier moved the USA to nuclear deterrence without the aid of foreign assistance.

Declaratory appearances aside, however, the operational substance of Soviet deterrence in this period indicates that if U.S. doctrine had performed an 'educative' function, the Soviet Union had proven either a seriously inattentive or highly sceptical 'student'. Rather than imitate the Eisenhower deterrence thesis, the Russians developed a doctrine of 'minimum deterrence' which had little in common with American 'massive retaliation' policy even in its modified 'New New Look' form. The Soviet conception of deterrence, although undoubtedly influenced by U.S. doctrine

and military-political actions, had shown itself to be sharply sensitive to a host of factors not directly related to the United States - geographical, historical, political, technological and economic - producing a deterrence doctrine which differed dramatically from that of the U.S.A. and firmly maintained the two countries in a basically asymmetrical strategic relationship.